DRUG & COSMETIC INDUSTRY

MARCH, 1952

FEATURE ARTICLES • •

FACTORS GOVERNING TODAY'S LIFE SPAN	L. Stambovsky	318
DANDRUFF	Milton A. Lesser	320
COLORING OF PHARMACEUTICALS—PART I	W. H. Peacock	322
THE AGAR INDUSTRY OF TODAY	Frank Child III	324
PREVENTION OF DENTAL CARIES	George D. Wessinger	326
HAIR CONDITIONERS	Harry Hilfer	328
DIFFERENCES IN SKIN SURFACES	Sture Johnson, Maurice Fliegelman, Roy Kile, and J. C. Fix	330
EVALUATION OF ODORS AND FLAVORS	Kurt S. Konigsbacher, William H. Danker and Ralph L. Evans	332

DEPARTMENTS • •

KEEPING POSTED	Thomas R. Farrell	313
PACKAGING AND SELLING	Frazer V. Sinclair	335
DOIN'S		343
NEWS	Frank Child III	349
MANAGEMENT FORUM	Francis Chilson	363
COMPOUNDER'S CORNER	Milton A. Lesser	373
INDUSTRY'S BOOKS	Harry G. Kelbly	377
READERS' QUESTIONS	Milton A. Lesser	379
ANIMAL HEALTH	Milton A. Lesser	380
PATENT THOUGHTS AND TRENDS	Thomas Cifelli, Jr.	383
PERFUMER'S SHELF	Milton A. Lesser	388
ADVANCING THERAPY	Milton A. Lesser	391
ABREAST OF THE MARKETS	Frank Child III	395

THOMAS R. FARRELL, Editor
FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
MAX FRANKEL, Art Director

The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer, Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass., U. S. A. Editorial and General Office, 101 West 31st St., New York 1, N. Y., U. S. A.

Business Manager, Frazer V. Sinclair; Advertising Manager, P. W. Alexander; Advertising Representatives, Walter M. Brauneiss, C. R. Keeley. Production Manager, Katherine Hyde; Circulation Manager, Harry G. Kelbly.

Chicago Advertising Representative: Dwight H. Early, 100 No. LaSalle St., Chicago 2; Telephone, CEntral 6-2184.

Subscription price — $3.00 a year, in advance, Foreign Countries, $5.00. Single copies, 35c; Back issues, 50c. Entered as Second Class Matter, January 1, 1928, at the Post Office at Pittsfield, Mass., under the Act of March 3, 1879. Member of Audit Bureau of Circulations.

Contents Copyrighted 1952 by Drug Markets Inc.

DRUG & COSMETIC INDUSTRY

MARCH, 1952

FEATURE ARTICLES • •

FACTORS GOVERNING TODAY'S LIFE SPAN	L. Stambovsky	318
DANDRUFF	Milton A. Lesser	320
COLORING OF PHARMACEUTICALS—PART I	W. H. Peacock	322
THE AGAR INDUSTRY OF TODAY	Frank Child III	324
PREVENTION OF DENTAL CARIES	George D. Wessinger	326
HAIR CONDITIONERS	Harry Hilfer	328
DIFFERENCES IN SKIN SURFACES	Sture Johnson, Maurice Fliegelman, Roy Kile, and J. C. Fix	330
EVALUATION OF ODORS AND FLAVORS	Kurt S. Konigsbacher, William H. Danker and Ralph L. Evans	332

DEPARTMENTS • •

KEEPING POSTED	Thomas R. Farrell	313
PACKAGING AND SELLING	Frazer V. Sinclair	335
DOIN'S		343
NEWS	Frank Child III	349
MANAGEMENT FORUM	Francis Chilson	363
COMPOUNDER'S CORNER	Milton A. Lesser	373
INDUSTRY'S BOOKS	Harry G. Kelbly	377
READERS' QUESTIONS	Milton A. Lesser	379
ANIMAL HEALTH	Milton A. Lesser	380
PATENT THOUGHTS AND TRENDS	Thomas Cifelli, Jr.	383
PERFUMER'S SHELF	Milton A. Lesser	388
ADVANCING THERAPY	Milton A. Lesser	391
ABREAST OF THE MARKETS	Frank Child III	395

THOMAS R. FARRELL, Editor
FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
MAX FRANKEL, Art Director

The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer, Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass., U. S. A. Editorial and General Office, 101 West 31st St., New York 1, N. Y., U. S. A.

Business Manager, Frazer V. Sinclair; Advertising Manager, P. W. Alexander; Advertising Representatives, Walter M. Brauneiss, C. R. Keeley. Production Manager, Katherine Hyde; Circulation Manager, Harry G. Kelbly.

Chicago Advertising Representative: Dwight H. Early, 100 No. LaSalle St., Chicago 2; Telephone, CEntral 6-2184.

Subscription price — $3.00 a year, in advance, Foreign Countries, $5.00. Single copies, 35c; Back issues, 50c. Entered as Second Class Matter, January 1, 1928, at the Post Office at Pittsfield, Mass., under the Act of March 3, 1879. Member of Audit Bureau of Circulations.

Contents Copyrighted 1952 by Drug Markets Inc.

SPECIFY THE ORIGINAL

Sterwin's ZIMCO® Vanillin U.S.P.

THE ORIGINAL PURE LIGNIN VANILLIN

Consult your flavor supplier

ORIGIN

Sterwin's Zimco brand is the *original lignin vanillin*. This *pure crystalline* vanillin has been produced continuously since 1937, at our Rothschild, Wisconsin plant, by our own exclusive patented process.

QUALITY

Zimco's present high quality was achieved as a result of continuous research and development in our own laboratories. Today Sterwin's Zimco Vanillin is recognized by the entire Food Industry as *the* top quality product. There is no finer vanillin flavor. Ask the man who uses it.

DEPENDABILITY

Over a long period of years we have fulfilled all contracts, and allotted any surplus production fairly and equitably. This is our established policy. Stocks are carried at strategically located warehouses to insure prompt deliveries.

Sterwin is a subsidiary of Sterling Drug Inc., one of the nation's leading manufacturers of internationally known proprietaries and fine chemicals.

U.S.P. VITAMINS IN BULK also available in carriers for easy, accurate and economical fortification of foods.

Sterwin Chemicals INC.
SUBSIDIARY OF STERLING DRUG INC.
1450 BROADWAY, NEW YORK 18, N. Y.
445 Lake Shore Drive, Chicago 11, Ill.
Warehouse stocks: NEW YORK, CHICAGO, LOS ANGELES
Shipments made DIRECT FROM FACTORY: ROTHSCHILD, WISCONSIN
Additional stocks carried at: ATLANTA, DALLAS, PORTLAND (Ore.), RENSSELAER (N. Y.) ST. LOUIS, SAN FRANCISCO for emergency deliveries.

WORLD'S LARGEST SUPPLIERS OF VANILLIN

schimmel

In suntan products

complete protection

is spelled

FILTROSOL

Give your suntan product extra effectiveness
by using Filtrosol as the sunscreening agent.

FILTROSOL A
Not water soluble.
For creams and oils.

FILTROSOL B
Water soluble. For
emulsions and lotions.

For perfuming suntan
preparations use our

SUNTAN PERFUME S 5067
Light, bright
and refreshing.

BOUQUET PARIS 4055
Smooth, fine modern
floral bouquet.

CYCLAMEN SUPRA K S 3196
Delicate, flowery and
just sweet enough.

We have a full line of suntan perfumes.
Write us for further information and samples.

schimmel & co., inc.

601 West 26th Street, New York 1, N. Y.

This man understands vitamin A

● His job is to blend vitamin A concentrates to the exact potency that goes into your own particular formulations with the least manipulation, the least chance for waste in your plant.

Vitamin A has been his business and our business for a long time. Years ago, DPi research in molecular distillation freed natural vitamin A from the traditional fishiness of crude liver oils. In 1948, DPi research in organic synthesis gave the American market its first synthetic vitamin A in commercial quantity.

Between the two, DPi has no axes to grind. If you want to continue with natural vitamin A in your established formulations, our distilled vitamin A concentrate gives you a choice of any potency between 50,000 and 500,000 U.S.P. XIV units per gram. If you prefer the higher potency attainable with synthesized vitamin A, we shall be happy to quote price and delivery on Myvax® Synthetic Vitamin A Acetate up to 1,500,000 U.S.P. units per gram and Myvax 16® Synthetic Vitamin A Palmitate up to 1,000,000 U.S.P. XIV units per gram.

Write, wire, or phone ***Distillation Products Industries,*** 791 Ridge Road West, Rochester 3, N.Y. (Division of Eastman Kodak Company).
Sales offices: New York and Chicago • W. M. Gillies and Company, Los Angeles and San Francisco • Charles Albert Smith Ltd., Montreal and Toronto.

DPi

leaders in research and production of vitamin A and vitamin E

Also... high vacuum equipment... distilled monoglycerides... more than 3500 Eastman Organic Chemicals for science and industry

In proprietaries

PART OF THE CURE

IS COLOR

Their eyes drink it in before they sip it from the spoon. Exactly the right color—uniformly repeated year after year—has much to do with continued faith in the efficacy of your products.

National Aniline—pioneer producer of Certified Colors—offers you its 46 years of experience in solving color problems for the drug and cosmetic industry. You can always be sure of unvarying uniformity in shade, strength and chemical composition if you standardize on

National

CERTIFIED COLORS

CERTIFIED COLOR DIVISION

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

SYNTHETIC FRAGRANCES

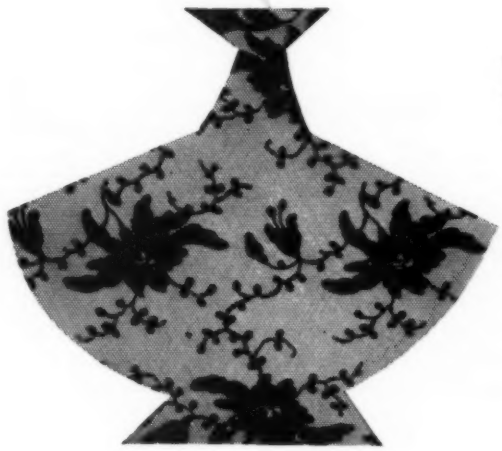
to challenge the genius of nature!

BERGAMOT

VETIVERT

PATCHOULY

ORRIS CONCRETE



Unsurpassed for quality and uniformity . . . D&O Replacements faithfully reproduce the fragrance and characteristics of the natural product — at a far lower cost. Trial quantities, detailed information on request.

Oil Bergamot Synthetic

Oil Vetivert Synthetic

Oil Patchouly Synthetic

Orris Concrete Synthetic

D&O **DODGE & OLCOTT, INC.**

180 Varick Street • New York 14, N. Y.

SALES OFFICES IN PRINCIPAL CITIES

ESSENTIAL OILS • AROMATIC CHEMICALS • PERFUME BASES • FLAVOR BASES • VANILLA

Since 1768

Engraving eighteenth century

Founded in the glamorous period preceding the French Revolution, the House of Antoine Chiris has, since 1768, stood for high quality standards in the Essential Oil and Aromatic Industries.

Its exclusive occupation since its inception is producing of Essential Oils, Floral Absolutes and Aromatic Specialties—from materials garnered the wide world over, many grown on Chiris' own plantations.

THE INTEGRITY OF CHIRIS PRODUCTS HAS WITHSTOOD THE TEST OF TIME.

GRASSE PARIS NEW YORK LONDON SAO PAULO

In each city there is a Chiris organization pooling all the experience and technical resources of nearly 200 years of activity in the world's Essential Oil and Aromatic Industries.

We regard it as a privilege to consult on your aromatic problems. Our creative laboratories are at your service.

ANTOINE CHIRIS Co., Inc.

119 WEST 57th STREET, NEW YORK 19, N. Y.

GRASSE • PARIS • LONDON • SAO PAULO

Prompt relief from packaging problems

More and more manufacturers are recognizing the merchandising magic of a package that is quick to stop the eye . . . because that's when sales are made. H & D Merchandising Boxes are proving most effective in prompting purchases through eye-catching display. For example: this colorful display box for Mintglo not only provides product protection, but sets up easily, supplies excellent trade-mark identification, makes it sales point effectively, shows off the product to best advantage.

Whatever your product, whatever your packaging problem . . . the H & D Package Laboratory is at your service to provide a practical, economical solution. For the complete story on easier packing, better product protection, freight savings, "show boxing" display, write for the 14-volume "Little Packaging Library." Hinde & Dauch, 5209 Decatur Street, Sandusky, Ohio.

H&D®

HINDE & DAUCH

Authority on Packaging

Akron, Baltimore, Battle Creek, Mich., Bloomington, Ill., Buffalo, Chicago, Cincinnati, Cleveland, Columbus, Denver, Detroit, Fairfield, Conn., Findlay, Ohio, Gloucester City, N. J., Greensboro, N. C., Hoboken, Indianapolis, Jamestown, N. Y., Kansas City, Lenoir, N. C., Minneapolis, Omaha, Plymouth, Ind., Reading, Pa., Richmond, Va., Roanoke, Va., Rochester, Sandusky, Ohio, Shrewsbury, Mass., St. Louis, Toledo, Watertown, Mass.

what's in a drop of perfume?

THE RADIANT SWEETNESS OF THE INGENUE....?

THE DRAMATIC APPEAL OF THE SOPHISTICATE....?

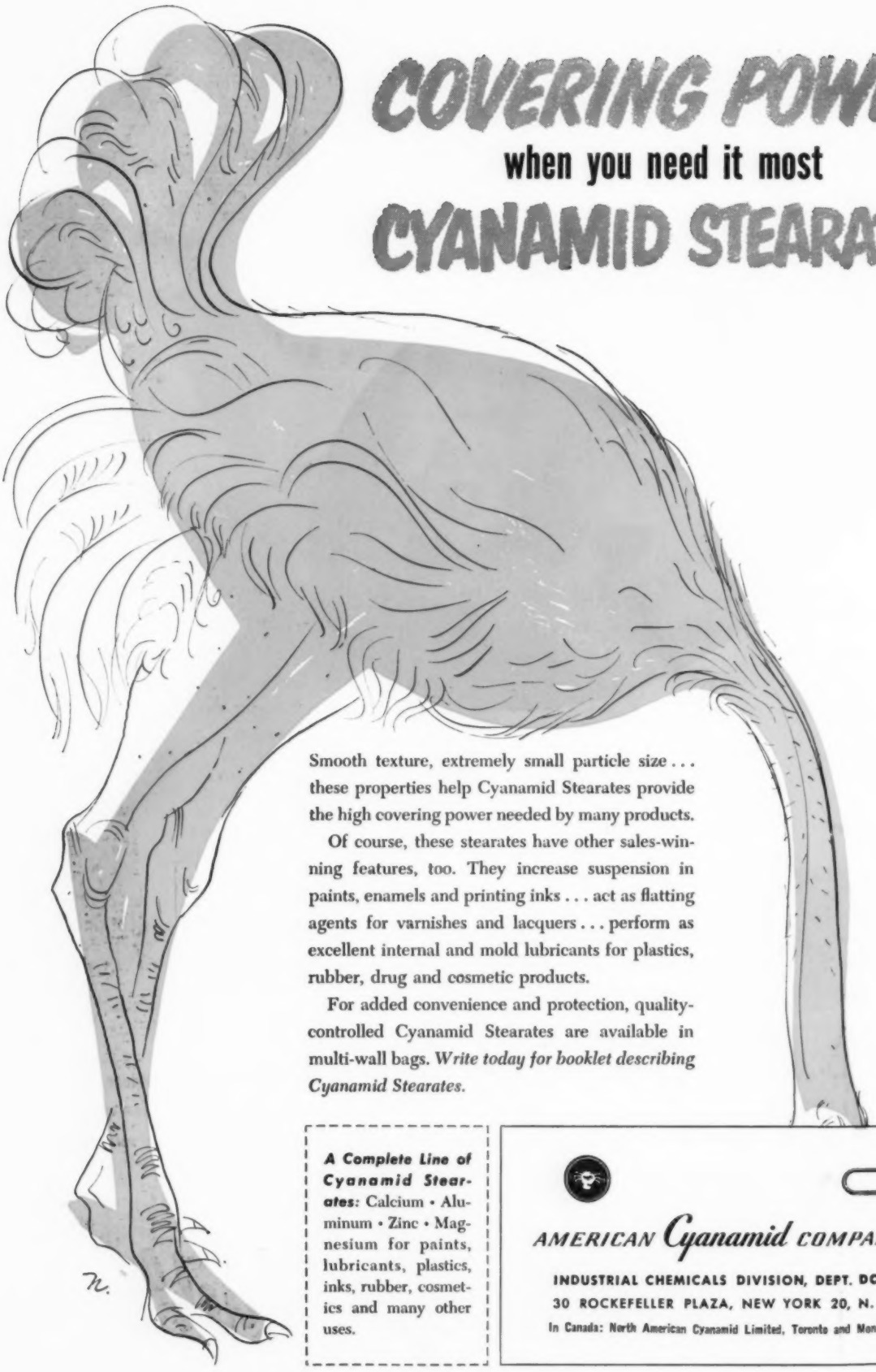
But to achieve the ultimate, intangible effect, that drop of perfume must contain the creative genius and the scientific perfection of the master perfumer and the purity of dependable materials.

For creative assistance and the finest in perfume materials, van Ameringen-Haebler, Inc. stands able and ready to serve you.

V A H

van Ameringen-Haebler, inc.

521 WEST 57TH STREET, NEW YORK 19, N. Y.



COVERING POWER
when you need it most
CYANAMID STEARATES

Smooth texture, extremely small particle size . . . these properties help Cyanamid Stearates provide the high covering power needed by many products.

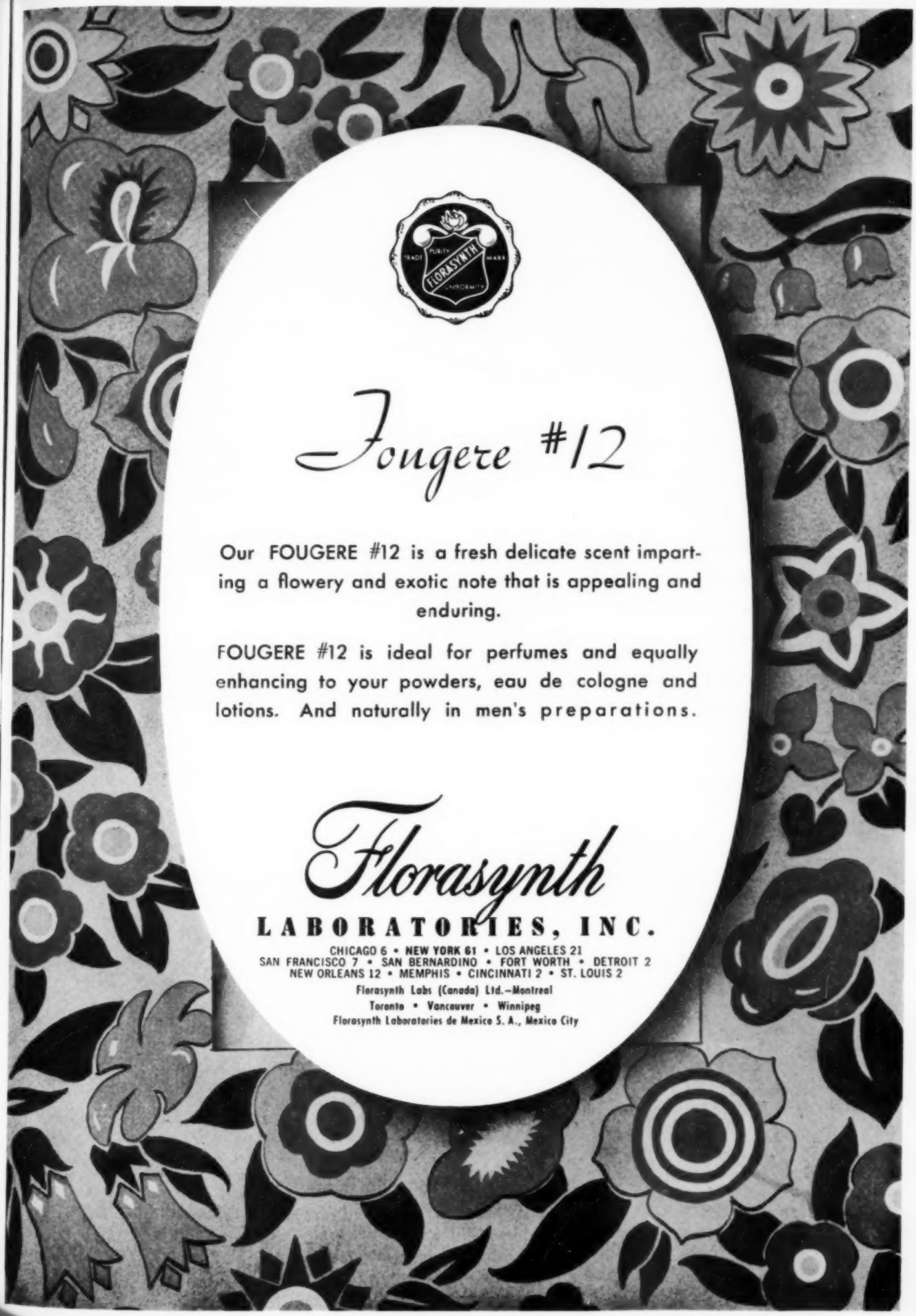
Of course, these stearates have other sales-winning features, too. They increase suspension in paints, enamels and printing inks . . . act as flatting agents for varnishes and lacquers . . . perform as excellent internal and mold lubricants for plastics, rubber, drug and cosmetic products.

For added convenience and protection, quality-controlled Cyanamid Stearates are available in multi-wall bags. *Write today for booklet describing Cyanamid Stearates.*

A Complete Line of Cyanamid Stearates: Calcium • Aluminum • Zinc • Magnesium for paints, lubricants, plastics, inks, rubber, cosmetics and many other uses.

AMERICAN *Cyanamid* COMPANY

INDUSTRIAL CHEMICALS DIVISION, DEPT. DC 3
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
In Canada: North American Cyanamid Limited, Toronto and Montreal



Fougere #12

Our FOUGERE #12 is a fresh delicate scent imparting a flowery and exotic note that is appealing and enduring.

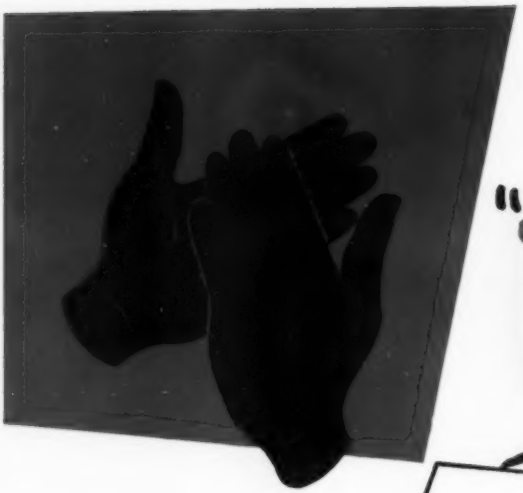
FOUGERE #12 is ideal for perfumes and equally enhancing to your powders, eau de cologne and lotions. And naturally in men's preparations.

Florasynth

LABORATORIES, INC.

CHICAGO 6 • **NEW YORK 61** • LOS ANGELES 21
SAN FRANCISCO 7 • SAN BERNARDINO • FORT WORTH • DETROIT 2
NEW ORLEANS 12 • MEMPHIS • CINCINNATI 2 • ST. LOUIS 2

Florasynth Labs (Canada) Ltd.—Montreal
Toronto • Vancouver • Winnipeg
Florasynth Laboratories de Mexico S. A., Mexico City



LET'S GET DOWN TO

"Essentials"

Felton Quality Control starts right back at the prime source. That's why discriminating users consider the Felton Essential Oils listed here always the best dollar values offered.

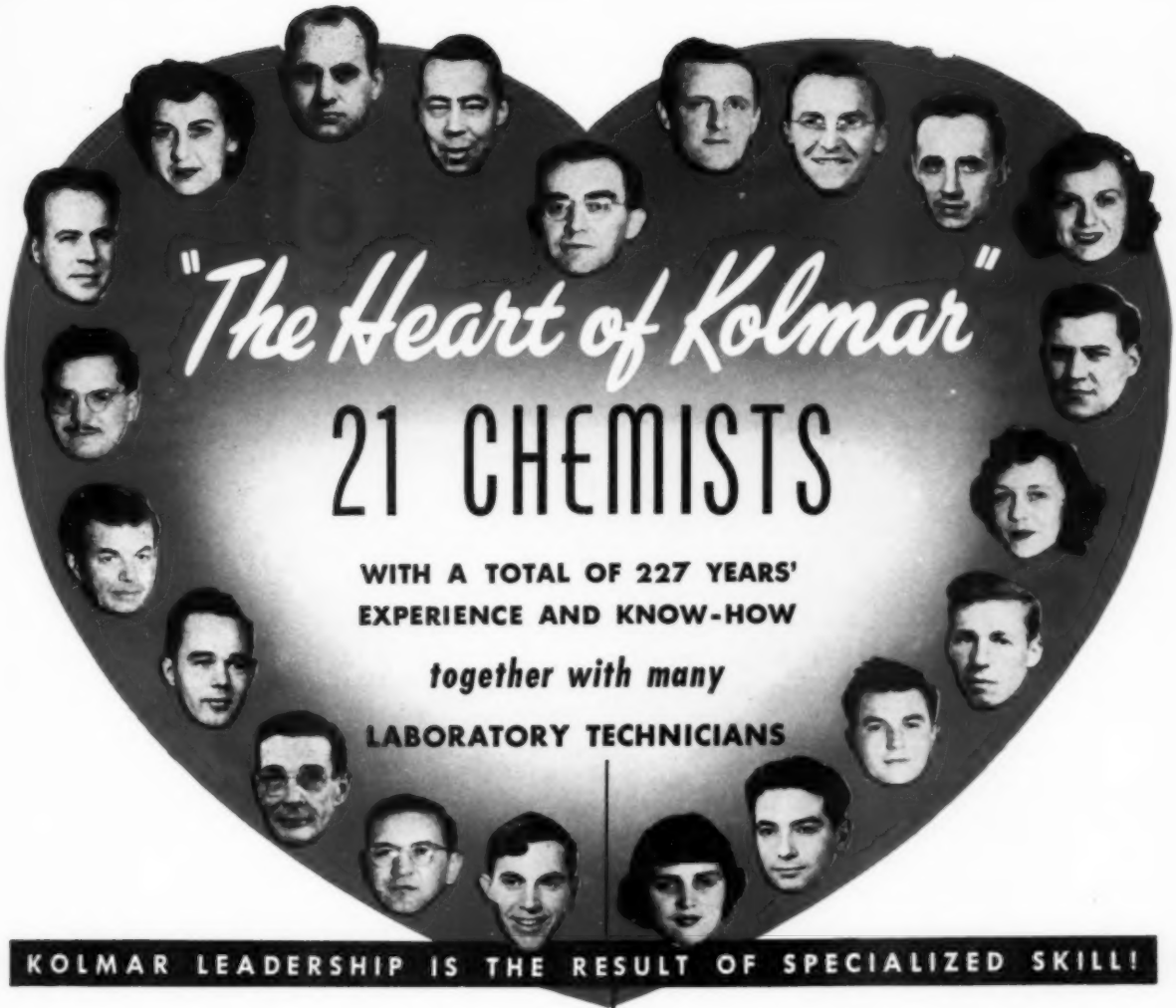
- ☐ Almond
- ☐ Anise
- ☐ Bay
- ☐ Bergamot
- ☐ Birch
- ☐ Bois de Rose
- ☐ Cananga
- ☐ Cassia
- ☐ Cedarleaf
- ☐ Cedarwood
- ☐ Cherry Laurel
- ☐ Cinnamon
- ☐ Citronella
- ☐ Clove
- ☐ Copaiba
- ☐ Coriander
- ☐ Eucalyptus
- ☐ Geranium
- ☐ Grapefruit
- ☐ Guaiacwood
- ☐ Labdanum
- ☐ Lavandin
- ☐ Lavender
- ☐ Lemon
- ☐ Lemongrass
- ☐ Limes
- ☐ Orange
- ☐ Patchouly
- ☐ Peppermint
- ☐ Petitgrain
- ☐ Pimenta
- ☐ Rosemary
- ☐ Sage
- ☐ Sandalwood
- ☐ Spike
- ☐ Spearmint
- ☐ Thyme
- ☐ Vetivert
- ☐ Wintergreen
- ☐ Ylang Ylang

GET IN TOUCH WITH US NOW FOR LATEST QUOTATIONS!

AROMATICS • PERFUME BASES • ESSENTIAL OILS

FELTON CHEMICAL COMPANY, INC.
599 Johnson Ave., Brooklyn 6, N. Y.

PLANTS: BROOKLYN, N. Y. • LOS ANGELES, CAL. • MONTREAL, QUE. • PARIS, FRANCE
SALES OFFICES: ATLANTA • BOSTON • CHICAGO • DALLAS • PHILADELPHIA
ST. LOUIS • TOLEDO • TORONTO
STOCKS CARRIED IN PRINCIPAL CITIES



"The Heart of Kolmar"

21 CHEMISTS

WITH A TOTAL OF 227 YEARS' EXPERIENCE AND KNOW-HOW

together with many

LABORATORY TECHNICIANS

KOLMAR LEADERSHIP IS THE RESULT OF SPECIALIZED SKILL!

♥ The "Heart of Kolmar" provides continuous creative research and thorough testing at every step of the manufacturing process...

♥ It provides the control of quality from raw material to finished product...

♥ It has given Kolmar product superiority and uniformity, combined with favorable price...

♥ It has enabled Kolmar to develop many of the best known products in the cosmetic field...

♥ It constantly works for the improvement of existing methods and formulae, and the development of new ones.

♥ It has won Kolmar recognition *as America's Leader in Private Label Cosmetics.*

The customer's rights in the formula under which he operates is always respected by Kolmar. Consultation will not obligate you and there's a Kolmar Laboratory or Representative near to give you prompt service at all times.

●

Kolmar Products include Lipstick, Dry and Cream Rouge, Loose Face Powder, Cake Make-Up, Compact Powder, Foundation Creams, Liquid Make-Up, Eye Shadow, Mascara, Lotions, Colognes, Perfumes and other cosmetics.

●

REPRESENTATIVES: DOUGLAS HAGGERTY, THOMAS LA PRELLE, EMPIRE STATE BUILDING, ROOM 605, NEW YORK, N. Y.; WARREN M. CURRY, 599 PLUM ST., N. W., ATLANTA, GA.; NORMAN KOLE, 419 MERCHANDISE MART, CHICAGO, ILL.; J. C. WEILER, 8003 FORSYTHE BLVD., ST. LOUIS 5, MO.; R. F. G. BYINGTON, 1260 N. WESTERN AVENUE, LOS ANGELES, CALIF.; RICHARD F. SPICKER, 419 WEST FIFTH ST., CINCINNATI, OHIO; ELMER J. SCHWARTZ, 10016 E. 35th TERRACE, KANSAS CITY 3, MO.

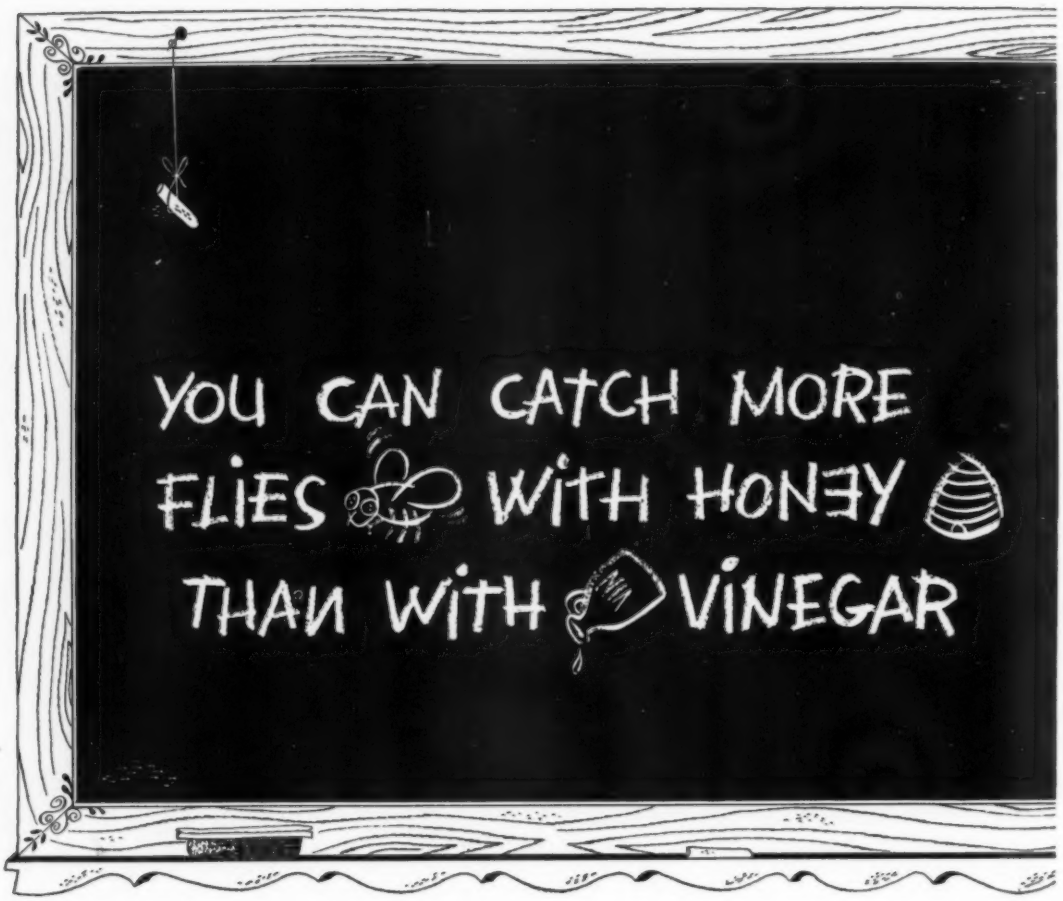
Kolmar LABORATORIES

MILWAUKEE 2, WISCONSIN

PRIVATE LABEL COSMETICS EXCLUSIVELY

KOLMAR COSMETIC SPECIALTIES, INC. complete package division ● KOLMAR INTERNATIONAL, INC. ● WICKHEN PRODUCTS, INC.

PLANTS IN PORT JERVIS, NEW YORK; TWO PLANTS IN MILWAUKEE, WIS., AND ONE IN HOLLYWOOD, CALIF.
CANADA: KOLMAR WILCKENS, LTD., PLANT IN OAKVILLE, ONTARIO; OFFICE: 205 YONGE ST., TORONTO, ONT.
AUSTRALIA: KOLMAR (AUST.) PTY. LIMITED, 494 KENT ST., SYDNEY; KOLMAR EUROPE: PARIS, FRANCE



You'll catch more customers, too. Sweet-tasting, sweet-smelling drugs and cosmetics are consistently the best sellers.

To give *your* products this sales appeal, call on MM&R. Since 1895, their technical know-how and high quality stocks have made them leaders in the production of flavors and odors for outstanding drugs and cosmetics.

Write for complete listing on MM&R Essential Oils, Perfume Oils, Flavors, Odor Neutralizers, Balsams, Oleoresins and Certified Colors – all premium-quality, all modest in cost and *all* favorites in the drug and cosmetic industry.

M&R MAGNUS

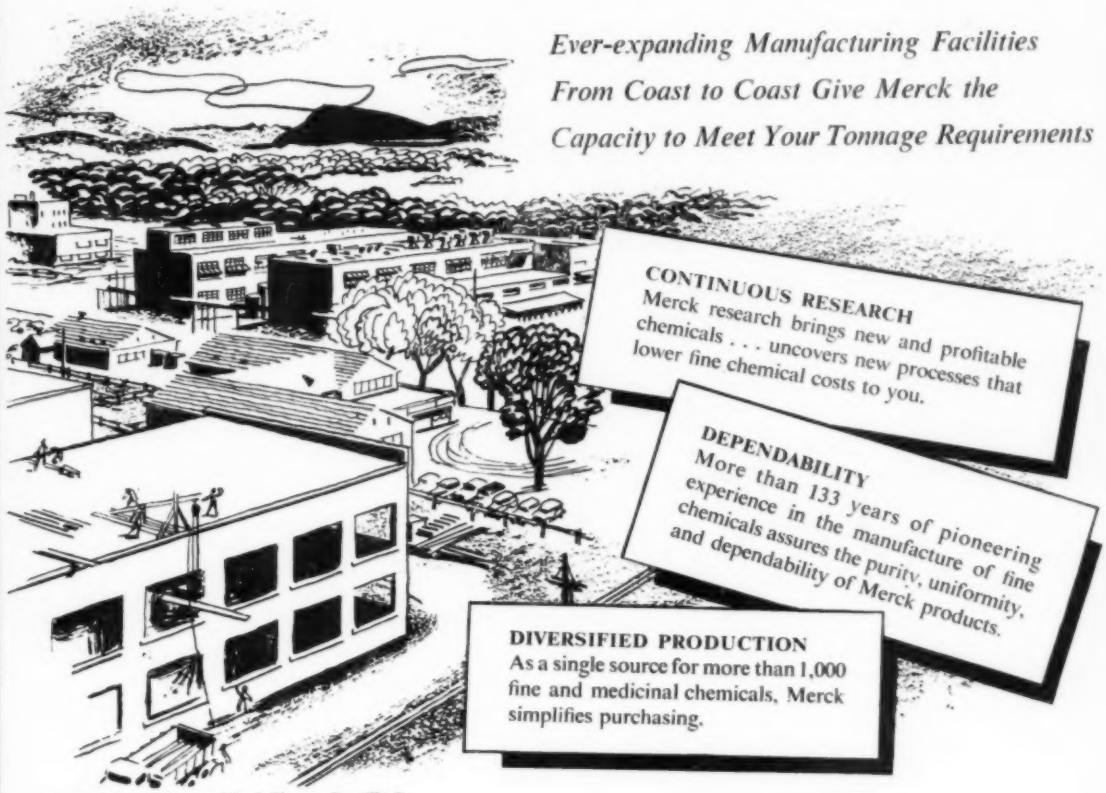
Magnus, Mabee & Reynard, inc.

Since 1895 — ONE OF THE WORLD'S GREATEST SUPPLIERS OF ESSENTIAL OILS

16 Desbrosses Street, New York 13, N. Y. 221 North La Salle Street, Chicago 1, Illinois

Key Facts about Merck Service

Ever-expanding Manufacturing Facilities From Coast to Coast Give Merck the Capacity to Meet Your Tonnage Requirements



CONTINUOUS RESEARCH
Merck research brings new and profitable chemicals . . . uncovers new processes that lower fine chemical costs to you.

DEPENDABILITY
More than 133 years of pioneering experience in the manufacture of fine chemicals assures the purity, uniformity, and dependability of Merck products.

DIVERSIFIED PRODUCTION
As a single source for more than 1,000 fine and medicinal chemicals, Merck simplifies purchasing.

Partial view of the new Merck Plant at Danville, Pa.

For Fine Chemicals—Look First to Merck

ANTIBIOTICS	CITRATES	MERCURIALS	THEOBROMINE
BISMUTH SALTS	EPHEDRINES	QUININES	THEOPHYLLINES
BROMIDES	IODIDES	SALICYLATES	VITAMINS
CAFFEINE	IRON SALTS	SULFONAMIDES	ZINC SALTS

Research and Production for the Nation's Health

MERCK

MERCK & CO., Inc.
Manufacturing Chemists
RAHWAY, NEW JERSEY
In Canada: MERCK & CO. Limited—Montreal

FOR PHARMACEUTIC CHEMICALS

FOR SPECIAL "CUSTOM-MADE" CHEMICALS

– there is no Better Source than B&A!

ACETYL CHLORIDE
ACID ACETIC
Glacial 99.5% U.S.P.
ACID FORMIC
98-100% C.P.
ACID HYDROCHLORIC
Reagent, A.C.S.
ACID NAPHTHALENE ACETIC
(Alpha)
ACID NITRIC
Reagent, A.C.S.
ACID OXALIC
Anhydrous, Technical
ACID PHOSPHORIC, ORTHO
85% U.S.P.
ACID SULFURIC
Reagent, A.C.S.
ALUMINUM CHLORIDE
32° Baumé Solution
ALUMINUM SULFATE
80-Mesh Powder, N.F.
AMMONIUM ACETATE
Crystal, Purified
AMMONIUM HYDROXIDE
Reagent, A.C.S.
AMMONIUM SULFATE
White Granular, Purified
CALCIUM ACETATE
Powder, Purified
CALCIUM CHLORIDE, Anhydrous
ETHER, U.S.P.
FERROUS SULFATE
Granular, U.S.P.
POTASSIUM CYANATE
Powder, Purified
POTASSIUM ACETATE
Technical, U.S.P.
POTASSIUM PHOSPHATE
Dibasic
Monobasic, Purified
POTASSIUM THIOCYANATE, N.F.
SALICYLAMIDE, PURIFIED
SODIUM BISULFITE
Meta, Anhydrous,
Powder, Reagent
SODIUM CARBONATE
Monohydrate, U.S.P.
SODIUM HYDROXIDE
N.F., Reagent, A.C.S., & Tech.
SODIUM PHOSPHATE
Monobasic, Crystal, Reagent
Dibasic, Crystal, U.S.P.
SODIUM SULFATE
Anhy. Powder, N.F. VII
SODIUM SULFITE
Exsiccated Powder, U.S.P.
SODIUM THIOSULFATE
Granular, U.S.P.

BAKER & ADAMSON'S ABILITY to produce tonnage quantities of extremely high purity chemicals for use by the Pharmaceutical Industry is well known. It is a natural outgrowth of 70 years' experience in manufacturing hundreds of analytical reagents for the most exacting laboratory applications.

WHETHER YOU REQUIRE high purity process materials or special chemicals "custom-made" to your specifications—call on Baker & Adamson. You will find there is no better source than B&A!

In addition to the N.F., U.S.P., and Reagent grade materials listed at the left, B&A offers a large number of other chemicals regularly used in pharmaceutical manufacture. For further information, consult the nearest B&A office.

REAGENTS
B&A
STANDARD OF PURITY
FINE CHEMICALS

BAKER & ADAMSON *Reagents and Fine Chemicals*

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Offices: Albany* • Atlanta • Baltimore • Birmingham* • Boston* • Bridgeport* • Buffalo* • Charlotte* Chicago* • Cleveland* • Denver* • Detroit* • Houston* • Jacksonville • Kalamazoo • Los Angeles* Minneapolis • New York* • Philadelphia* • Pittsburgh* • Portland (Ore.) • Providence* • St. Louis* San Francisco* • Seattle • Yakima (Wash.)
In Wisconsin: General Chemical Company, Inc., Milwaukee, Wis.
In Canada: The Nichols Chemical Company, Limited • Montreal* • Toronto* • Vancouver*
SETTING THE PACE IN CHEMICAL PURITY SINCE 1882

*Complete stocks are carried here

Fragrine... perfume oil concentrate

a dramatic... exotic... sophisticated fragrance for perfumes and toiletries

We present with pride — FRAGRINE — a skillful blend of the finest perfume materials used in the highest quality perfumes.
A fragrance of sophistication, amazingly interpreted at a down-to-earth price that permits its use in a wide range of products.
Uniform . . . dependable . . . long-lasting. $9.50 *the pound*
We'll be glad to send you samples for your own tests.
Why not write us today.

AROMATIC PRODUCTS, INC.

15 EAST 30th STREET • NEW YORK 16

CHICAGO • DALLAS • MEMPHIS • PITTSBURGH • LOS ANGELES • BOSTON

MEMBER FRAGRANCE FOUNDATION

BERGAMOT S. R. D. EXTRA

A fine substitute for oil of Bergamot.
We recommend it for high class colognes.

BERGAMOT S. R. D.

A less expensive product.

ROURE-DUPONT, INC.

ESSENTIAL OILS, AROMATIC CHEMICALS AND PERFUME BASES

GENERAL OFFICES
366 MADISON AVENUE, NEW YORK 17, N. Y.

CHICAGO BRANCH
110 NORTH DEARBORN

LOS ANGELES BRANCH
5517 SUNSET BOULEVARD. HOLLYWOOD

SOLE AGENTS IN UNITED STATES AND CANADA FOR
ROURE-BERTRAND FILS et JUSTIN DUPONT
GRASSE (A. M.) FRANCE — ARGENTEUIL (S. & O.) FRANCE

stops the eye . . . starts the sale

pack to attract in maryland blue

Here is true double-take packaging. It stops the busiest shoppers . . . stops their eyes and starts the sale. It's double-duty packaging, too. Acts as a strong, practical container and as a powerful advertising, merchandising and selling tool. Maryland Blue Glass makes your product stand out and shout "Buy Me!" So follow the lead of many famous brands . . . pack to attract in Maryland Blue. Write for samples today.

MARYLAND GLASS CORPORATION • BALTIMORE 30, MARYLAND

also available in clear glass

You wanna buy some ISCO wax?

FACTS ABOUT ISCO WAXES

Carnauba #3 North Country

M.P.	182/184°F.
Acid No.	4.5/5.0
Ester No.	68/72
Sapon.	72/77

Bleached Montan

M.P.	145/151°F.
Acid No.	25/33
Ester No.	0/4
Sapon.	25/37
Flash Point	446°F.

Japan Wax Substitute #525

M.P.	135/136°F.
Acid No.	9/10
Ester No.	177/180
Sapon.	186/190
Penetration No.	18/19

OTHER ISCO PRODUCTS

GUMS • WHITE GOODS
HEAVY CHEMICALS
ABSORPTION BASES

Citrus fruits are covered with a film of wax, deposited by dipping the fruit in a mixture of Carnauba and other vegetable waxes. The coating fills the pores, and helps prevent decay by sealing the skin.

Fruit dipping is only one of the many applications for Isco Carnauba Wax, valuable to industry chiefly for its outstanding hardening and polishing properties. It is the mainspring of the floor polish industry and is also used for automotive, shoe, and furniture polishes.

Carnauba contributes its special characteristics to such diverse products as cosmetics and candles, photographic film and phonograph records, chewing gum and carbon paper. It enters into the manufacture of chalk, matches, protective coatings, paper sizes, soap and lubricants.

Isco imports Carnauba and other waxes from all over the world for refining and processing. These waxes are noted in the trade for their uniformity and freedom from foreign matter. For the best in refined waxes, call on Isco.

ISCO (T.M.)

INNIS, SPEIDEN & CO., INC.

117 LIBERTY STREET, NEW YORK 6, N. Y.

BOSTON • CHICAGO • CINCINNATI • CLEVELAND • GLOVERSVILLE • LOS ANGELES • PHILADELPHIA • SAN FRANCISCO

E. S. BROWNING CO., INC., San Francisco • Los Angeles Subsidiary of Innis, Speiden & Co., Inc.

Glamorous Hands Around the World...

DURLIN is the Foremost Name in **BULK NAIL ENAMEL**

catering to the leading class packagers the world over.

Durlin is first in quality, first in fashion-right colors,

first in technical and packaging service

glamorous hands *around the world...*

DURLIN CO.

744 BROAD STREET
NEWARK 2, NEW JERSEY
Cable Address: Durlin Newark Newjersey

ATLAS COSMETIC COLORS ***Certified in the United States... used throughout the world.***
Colors with superior solubility, incomparable brilliance, dependable uniformity . . . no wonder they have been the industry's standard for 101 years. We produce every color in the spectrum... *just* the color to enhance *your* product with exciting eye and buy appeal. Our research facilities and staff of color experts are available for creative consultation.

ESTABLISHED 1851
KOHNSTAMM & COMPANY Inc.
FIRST PRODUCERS OF CERTIFIED COLORS

89 PARK PLACE, NEW YORK 7 • 11-13 E ILLINOIS ST., CHICAGO 11 • 4735 DISTRICT BLVD., LOS ANGELES 11
BRANCHES IN OTHER PRINCIPAL CITIES OF THE U. S. A. AND THROUGHOUT THE WORLD

● *And uniform savings for you!* For any variation in the beeswax base of your chemical, pharmaceutical or cosmetic preparations can cause additional expense in your laboratory and plant—and lost sales at your dealers' counters.

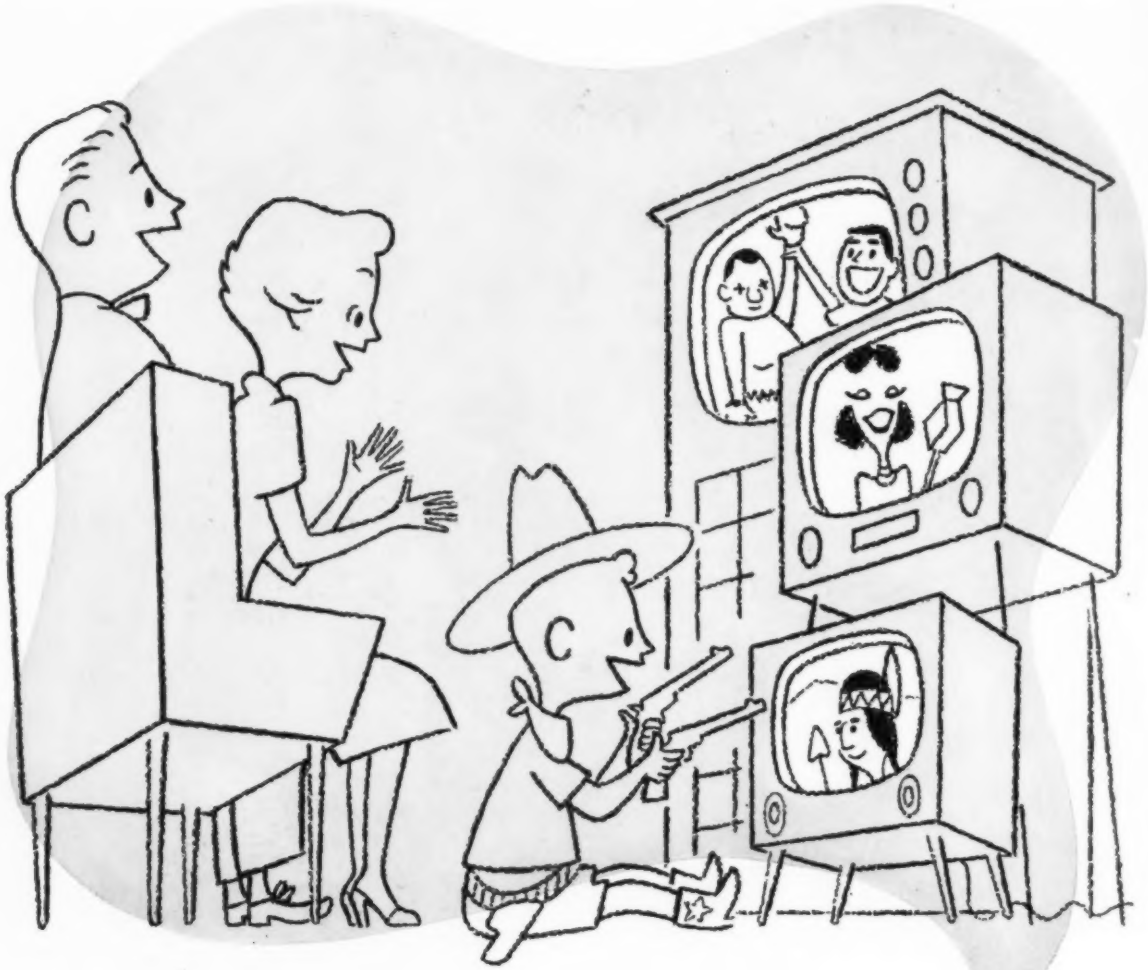
Natural refined beeswax is a small fraction of your total product cost. Yet the unchanging purity, texture and whiteness of Beehive Brand Beeswax can be the big help in keeping your product up to the high standards you have set.

FREE CONSULTATION SERVICE

The experimental data and practical manufacturing experience of nearly a hundred years' specialization in beeswax and beeswax compounds are at your service without cost or obligation. Write us about your beeswax problems.

WILL & BAUMER
Candle Co., Inc.
Syracuse, N. Y. **Established 1855**

SPERMACETI • CERESINE • RED OIL • YELLOW BEESWAX • COMPOSITION WAXES • STEARIC ACID • HYDISTEAR



Why are **DREYER SYNTHETIC SCENTS** like an evening of TV?

You get a great variety from Dreyer. Dreyer gives you a wide selection that makes a wise choice of synthetics easy.

Dreyer Floral Creations subtly and truly and honestly re-create natural flower odors. Apple Blossom, for instance, seems to have springtime in it. Dreyer Pine has that clean, lasting freshness.

All Dreyer Floral Synthetics cost less, go farther, cut costs. Use them in all your perfumed lines. Rely on their stable uniformity. Profit from their consistently lower prices. Send today for work-size free samples.

for Essential Oils,
Aromatic Chemicals, Perfume Compounds

P. R. DREYER Inc.

119 WEST 19th STREET, NEW YORK 11, N. Y.

These Chemical Buyers do the same job...

this one scouts the country for hundreds of chemicals

this one buys from NYQ all under 1 roof!

THE FULL LINE FINE CHEMICAL HOUSE

NYQ

REG. U.S. PAT. OFF.

The New York Quinine & Chemical Works, Inc.

GENERAL OFFICES

50 Church Street, New York 7, N. Y. • 729 West Division Street, Chicago 10, Ill. • 6399 Wilshire Blvd., Los Angeles 48, Calif.

Beauty Fashion

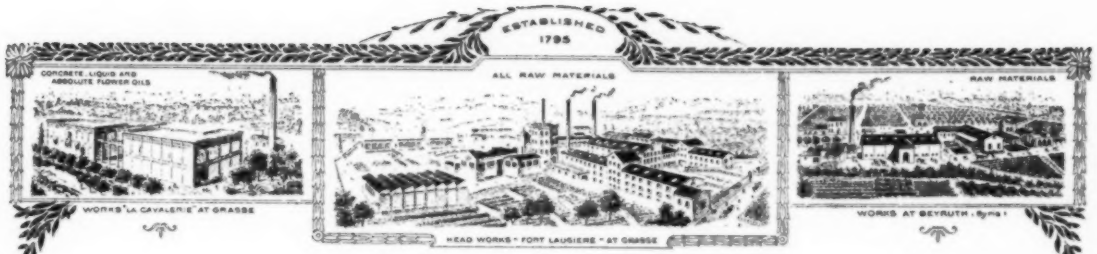
Provides a straight line to the most profitable points of sale.

1 *Reaches the retailers who know how to sell perfumes and cosmetics and who do sell well over 80% of these products, except low priced, mass distributed toiletries.*

2 *These retailers are nearly all (86%) located in the 168 metropolitan markets which do 75.27% of all apparel sales and over 85% of the perfume and cosmetic sales of selected cosmetic distribution.*

3 *The key to selling in these stores is the girl behind the counter. Beauty Fashion's club subscription, editorial policy, school training program and personal contacts have, over 35 years, made these girls an intimate part of Beauty Fashion's readers.*

101 West 31st Street, New York 1, N. Y.
Phone: LOngacre 3-3177



LAUTIER FILS

GRASSE, FRANCE

Natural Flower Absolutes
Essential Oils, Concentrated Natural Fixatives
Synthetic Aromatics

MOUSSE ODORANTE

A superior quality Oak Moss intended for fine perfumery.

MOUSSE D'ARBRE

The standard LAUTIER FILS quality Oak Moss for use in popular priced perfumes and soaps.

LAUTIER FILS also offers the above qualities with most of the color removed.

MOUSSE de CHENE BLONDE
MOUSSE D'ARBRE BLONDE

The raw Oak Moss is carefully selected to conform with LAUTIER FILS specifications. It is processed at the Grasse factories by time-proven methods.

SANTAL des INDES ORIENTALES

LAUTIER FILS Sandalwood Oil East Indian is distilled at our Grasse factories from selected raw Sandalwood.

LAUTIER FILS, INC.

321 Fifth Avenue — New York 16, N. Y.

GRASSE PARIS LONDON BEYROUTH CHICAGO ST. LOUIS SANTIAGO

CHARLES BOWMAN & CO. announce their appointment as

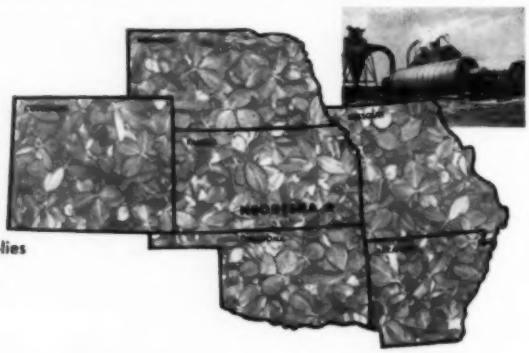
exclusive distributor for the products of

CHLOROPHYLL, INC. *Neodesha, Kansas*

CHLOROPHYLL · CAROTENE · XANTHOPHYLL · PHYTOL · CLOROFOLEN® (*the dog food deodorant*)

LOCATION

This new plant is located in the center of 4 million acres of the richest alfalfa country in the world. In this area there are 306 plants producing a million tons annually with refrigerated storage capacity of over 400,000 tons. The strategic location of the plant in this area assures adequate supplies of raw materials and uniform high quality at the lowest possible cost.



PRODUCTION

Every piece of machinery is new and modern and has been especially designed to meet the new demands for Chlorophyll of superior quality grades at economical prices.

Chlorophyll Inc.'s technical staff is skilled in extraction and pharmaceutical techniques. They can readily solve many problems for Chlorophyll users that might require long costly research.

Charles Bowman & Co. has been associated with the marketing and research of every Chlorophyll activity of importance in the last three years. Their representatives can advise you regarding the successful marketing potentialities of all phases of the use of Chlorophyll derivatives.

Write today for new price list.

CHARLES BOWMAN & CO.

220 East 42nd Street, N. Y. 17, N. Y.

Midwestern Office: 130 Central Avenue, Holland, Michigan

Pacific Coast Representative: W. Glenn Wunderly, Pasadena, California

Canadian Chlorophyll Sales: 393 Weston Road, Toronto, Ontario

American Distilled Oils

Produced at our Brooklyn Factory

OILS

CLOVE	BALSAM PERU	OPOPONAX
NUTMEG	CELERY	PIMENTO
ORRIS LIQUID, Conc.	GERANIOL	OLIBANUM
STYRAX	CITRONELLOL	SANDALWOOD
CASCARILLA		PATCHOULY

also LINALOOL • CITRAL • EUGENOL • RHODINOL

RESIN LIQUIDS

OLIBANUM	STYRAX
LABDANUM	BALSAM PERU
OPOPONAX	BALSAM TOLU
ORRIS BENZOIN	TONKA

Essential Oils • Aromatic Chemicals • Perfume Materials • Colors

OFFERING ROSE ABSOLUTE

66 *Years of continuous quality service—*
suppliers and manufacturers of—
Essential Oils • Aromatic Materials • Flavors

GEORGE LUEDERS & CO.
NEW YORK
GL
REGISTERED TRADE MARK

GEORGE LUEDERS & CO.

427 WASHINGTON ST., NEW YORK 13, N. Y.

Chicago • San Francisco • Montreal • Philadelphia • Toronto

Established 1885

Tablet coating

BY RONALD CLARKSON—TABLET CONSULTANT

At Last—A practical, authoritative textbook on Tablet Coating!

This is the answer to a world-wide request for a down-to-earth book on this highly specialized technique.

The author, Ronald Clarkson, an outstanding tablet consultant, is well known in this country and abroad for his contribution to technical literature on Tablet Manufacturing. Co-author of the text book *Manufacture of Compressed Tablets*, he has also presented papers on various phases of tablet manufacturing before the APMA production meetings.

Since entering the consulting field he has been a contributor to *Drug and Cosmetic Industry*.

In his capacity as a consultant the author has been supplying coating instructions to his clients in various parts of the world at a substantial fee. This confidential copyrighted treatise was entitled *The Fundamental Procedure for Coating Tablets* and forms the basis for this text.

The original treatise has been greatly expanded and here it is at a fraction of the original price!

A Valuable Aid to Everyone interested in coating tablets

- Production Managers
- Sales Managers
- Coaters (experienced and inexperienced)
- Development and Research Men
- Beginners
- Students

A Technical Book filled with Formulas for

- Subcoating Syrups
- Dusting Powders
- Colored Syrups
- Polishing Solutions
- Protective Coatings
- Coatings for Tropical Climates
- Enteric Coatings

In addition to the valuable formulas, complete directions for their preparation are given—even to such minute details as the temperatures at which they should be used.

Detailed instructions on how to reclaim spoiled tablets are outlined.

An entire chapter is devoted to installing a coating department—recommendations being given regarding the proper size and type of equipment, operating capacities, dust control and hot air systems—also how to lay out a complete coating department, including blueprint floor plan.

All extraneous matter has been omitted. This book deals 100% with the details of actual coating—how to do it and produce satisfactory results.

Here is the first book of its kind ever published. Complete, simple, and easy to follow instructions on what to do and what *not* to do. It will prove invaluable to you as an instructive text, and as a ready reference.

74 Pages — **Illustrated** — **15 Chapters**

Price $4 Postpaid

Book Department

DRUG & COSMETIC INDUSTRY

101 WEST 31ST ST. NEW YORK 1, NEW YORK

Ready For Immediate Shipment

Calco

FOLIC ACID

FACTS OF LIFE

FOLIC ACID is essential for life.

FOLIC ACID is involved in many human metabolic processes.

FOLIC ACID is life-saving in certain anemias.

FOLIC ACID is irreplaceable in the treatment of those anemias.

FOLIC ACID is present in abundance in some foods but, like other vitamins, may be lacking in low-grade diets.

FOLIC ACID belongs in B-complex and multivitamin preparations.

"IF THE PATIENT NEEDS B-VITAMINS, HE PROBABLY NEEDS FOLIC ACID."

BULK PHARMACEUTICALS

- Sulfadiazine U.S.P.*
- . . . Sulfa Drug of Choice
- Sulfamerazine U.S.P.*
- Sulfanilamide U.S.P.
- Sulfathiazole U.S.P.*
- Sulfapyridine N.F.*
- Sulfabenzamide*
- Sulfaguanidine U.S.P.
- Sulfamethazine
- Aminoacetic Acid N.F.
- Bishydroxycoumarin U.S.P.
- Calcium Pantothenate (Dextro)
- Choline Chloride
- Tri Choline Citrate
- Choline Dihydrogen Citrate
- Choline Bitartrate
- Cinchophen N.F.*
- Folic Acid U.S.P.
- Neocinchophen U.S.P.
- Methylene Blue U.S.P. (powder and crystal)
- Nicotinic Acid U.S.P.
- Nicotinamide U.S.P.
- Nicotinamide HCl
- Para Aminosalicylic Acid*
- Phenothiazine N.F. (regular and drench grades for veterinary use)
- Propylthiouracil U.S.P.
- Pyridoxine HCl
- Riboflavin U.S.P.
- Certified Colors for Pharmaceutical Use

*and sodium salt

In keeping with long-established policy, the above products are offered to ethical Pharmaceutical and Veterinary Manufacturers only.

AMERICAN Cyanamid COMPANY

PHARMACEUTICAL DEPARTMENT · CALCO CHEMICAL DIVISION

BOUND BROOK, N. J.

CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY
3505 North Kimball Avenue, Chicago 18, Illinois

CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY
5025 Pattison Avenue, St. Louis 10, Missouri

CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY
2300 S. Eastern Avenue, Los Angeles 22, California

REPRESENTED IN CANADA BY CALCO CHEMICAL DIVISION · NORTH AMERICAN CYANAMID, LIMITED
P. O. Box 10, St. Lambert, Montreal 23, P. Q. Royal Bank Bldg., Toronto, Ontario

Pine Needle Fragrances That Last and Last

Research is a wonderful thing, and here is one reason why:

For many years, a common problem with Pine Needle products has been their lack of odor permanence. Synfleur research has now solved that problem.

Our laboratories have developed several new aromatic chemicals which have made possible Pine Needle perfume oils that retain their Pine Needle character over a much longer period of time.

Pine Needle fragrances—with lasting qualities unobtainable before—are now ready for you from Synfleur.

Why not do a little of your own research? Write us for a sample and further information about the new longer-lasting Synfleur Pine Needle Perfumer Oils

Synfleur Scientific Laboratories, Inc. Monticello, N.Y.

REG. U.S. PAT. OFF.

FOUNDED 1889 BY ALOIS VON ISAKOVICS

ATLANTA • DETROIT • NEW YORK • LOS ANGELES • SAN FRANCISCO • MEXICO, D. F
HAVANA • MELBOURNE • BURMA • HONG KONG • BOGOTA • SAN JOSE
CIUDAD TRUJILLO • GUAYAQUIL • GUATEMALA CITY • CALCUTTA • WELLINGTON
MANAGUA • PANAMA • ASUNCION • MANILA • SAN SALVADOR • MONTEVIDEO

THE MARK OF DEPENDABILITY . . .

FINE HEYDEN CHEMICALS

SALICYLIC ACID

The Heyden hexagon has always been the symbol of dependability and quality in chemicals. Years of experience in manufacturing Salicylic Acid and its derivatives assure you of purity and uniformity in these important products—whether in prescription quantities or truckloads.

If your formulations require Salicylic Acid or any of the Salicylates listed below—for use as an intermediate; in ointments; in tablets; in many other applications—standardize on Heyden for assurance. Samples and further information will be forwarded promptly on request.

FOR PRESCRIPTION AND MANUFACTURING USE . . .

●

SODIUM SALICYLATE U.S.P.
Large Crystals, Flo Crystals or Powder

METHYL SALICYLATE U.S.P.
(Oil of Wintergreen, synthetic)

ACETYLSALICYLIC ACID U.S.P.
Crystals or Powder (also Starch Granulations)

PHENYL SALICYLATE N.F.
(Salol) Granular or Powder

AMMONIUM SALICYLATE N.F.
Crystals

CALCIUM SALICYLATE
Powder

LITHIUM SALICYLATE N.F.
Powder

MAGNESIUM SALICYLATE
Powder

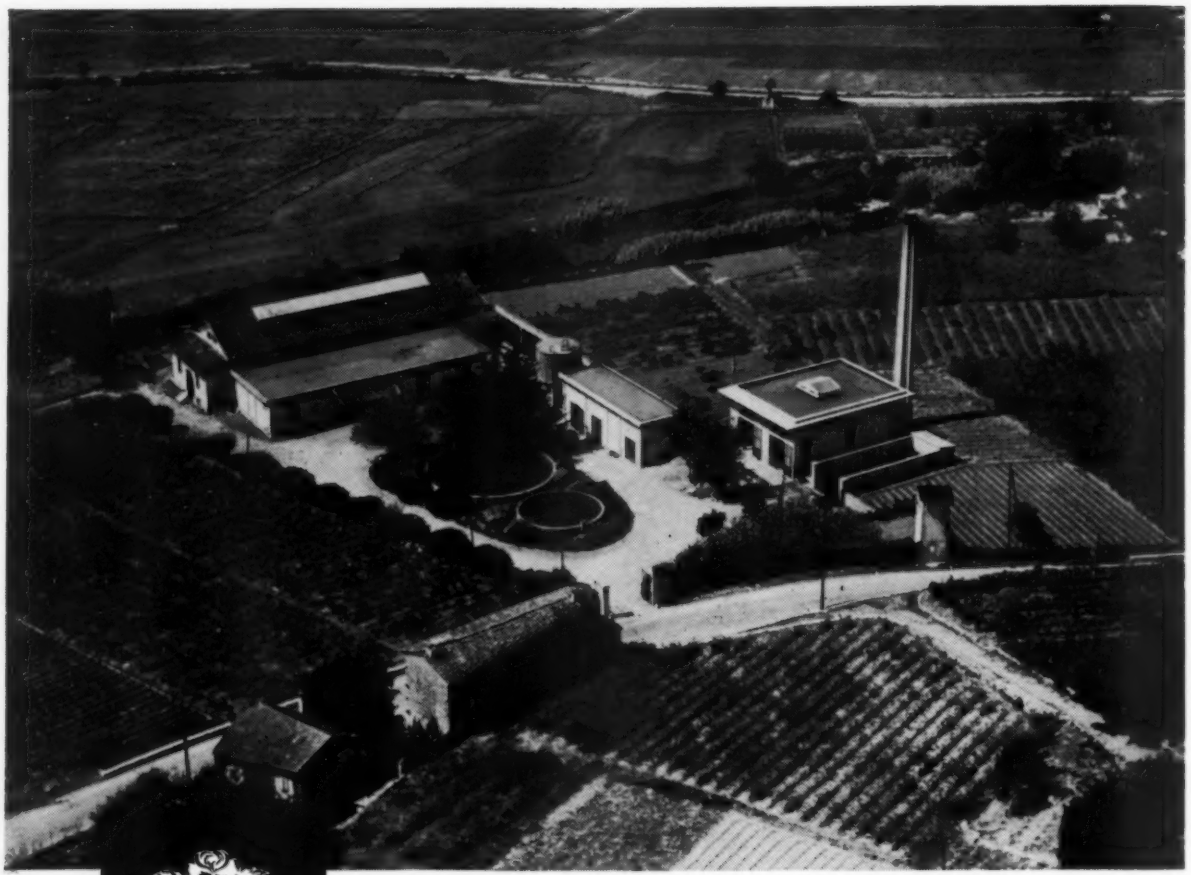
STRONTIUM SALICYLATE N.F.
Powder

Serving Industry Through Finer Chemicals

BENZALDEHYDE • BENZOATES • BENZYL CHLORIDE
BROMIDES • CHLORINATED AROMATICS
CREOSOTES • FORMALDEHYDE • FORMIC ACID
GLYCEROPHOSPHATES • GUAIACOLS
HEXAMETHYLENETETRAMINE • MEDICINAL COLLOIDS
METHYLENE DISALICYLIC ACID • PARAFORMALDEHYDE
PARAHYDROXYBENZOATES • PENICILLIN • PENTAERYTHRITOLS
PROPYL GALLATE • RESORCINOL • SALICYLATES
SALICYLIC ACID • STREPTOMYCIN

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION
393 SEVENTH AVENUE, NEW YORK 1, N. Y.
CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE



Factory No. 2 "in the heart of the flower fields"

Bertrand Frères

SOCIÉTÉ ANONYME

GRASSE, FRANCE

MIMOSA ABSOLUTE
ROSE DE MAI ABSOLUTE
ORANGE ABSOLUTE
JASMIN ABSOLUTE
LAVENDER "Revest"
LAVANDIN
GERANIUM—African & Bourbon
OAK MOSS—Green & Colorless

Bertrand Frères, Inc.

111 Broadway, New York 6, N. Y.

LEAVE IT TO THE EXPERTS!

We live in an age of experts. Radio and television boast programs with panels of experts on many subjects. And not infrequently, these experts, individually and collectively, find themselves stumped. Nobody is infallible.

Still, two heads are better than one! And a collection of experienced heads is better yet!

Here, at Strong Cobb, we're pretty proud of our own group of experts. For example, 5 of our chemists hold degree of Ph.D., 8 are M.S.'s, 62 others are especially expert in organic chemistry, biochemistry, pharmacology and allied scientific fields. Together they have a total of 900 years of experience in pharmaceutical manufacturing. The chances are, when you fire a question at *this* panel, you get the right answer.

That goes double for our Sales Department with some of the finest technical consultants in the business. To begin with, they speak your language, which simplifies matters a lot.

Whatever your private formula problem, get the benefit of *truly expert advice* . . . that results from 119 years' experience in manufacturing finer pharmaceuticals . . . the kind that has made Strong Cobb an institution.

PRESIDENT

Originators and Developers of the AMPIN® for Automatic, Subcutaneous and Intramuscular Injection

STRONG-COBB

PHARMACEUTICALS SINCE 1833

Strong Cobb & Co. Inc.

2654 LISBON ROAD, CLEVELAND 4, OHIO

IN CANADA: STRONG COBB OF CANADA, LTD., 388 ST. PAUL STREET, W., MONTREAL

because of Givaudan's c

CONTINUOUS RESEARCH...

new and finer materials are constantly being made available to broaden the scope of your abilities as a creative perfumer and to advance the quality and variety of your fragrances.

"Yours For Quality
In All Things Fragrant"

Giwaudan-Delawanna, Inc.

330 West 42nd Street, New York 36, N. Y.

Branches: Philadelphia • Boston • Cincinnati • Chicago • Seattle • Los Angeles • Toronto

facts you may want to know about—

Theophylline

prime producer

Mallinckrodt, one of the first U. S. producers of Theophylline from domestic raw materials, began manufacturing in 1933 and has maintained its position as a prime factor in the production of this valuable drug ever since.

advanced synthetic methods

Today Mallinckrodt Theophylline is produced in a modern plant by advanced synthetic methods developed by Mallinckrodt chemists and engineers (U. S. Patents 2,444,023; 2,533,022; 2,564,351). Latest methods of quality and process control, combined with large scale production, achieve top quality and a high degree of uniformity.

Mallinckrodt's Theophylline plant is devoted exclusively to Theophylline production and is able to supply unusual as well as normal requirements. Warehouse stocks are maintained at St. Louis, New York, and Los Angeles for prompt shipment to any locality.

grades available

Mallinckrodt Theophylline, packaged in 100-lb. leverpak drums and in 25-lb. fiber drums, is supplied in the following grades:

Theophylline USP XIV Monohydrate (Powder)
Theophylline USP XIV Anhydrous

Also available:

Theophylline and Sodium Acetate NF IX (Powder)
Theophylline Sodium Salicylate (Powder)

MALLINCKRODT CHEMICAL WORKS • St. Louis • New York • Montreal

BISMUTH SALTS • IODIDES •
MAGNESIUM TRISILICATE U.S.P.
CALCIUM GLUCONATE U.S.P. •
VITAMINS • MERCURIALS •
PHENOBARBITAL U.S.P. •

Mallinckrodt®

MANUFACTURERS OF FINE CHEMICALS
FOR THE PHARMACEUTICAL INDUSTRY •
SINCE 1867 •

"The French houses are asking us to measure their counter space in centimeters."

Keeping Posted

New TB Drug

DR. MARCUS D. Kogel, Commissioner of Hospitals of the City of New York, is apparently responsible for the premature release of the fact that a new remedy for tuberculosis, which holds great promise, has been under investigation for a comparatively short time. It seems that Hoffmann-La Roche and E. R. Squibb & Sons, both of whom have been screening many products for their effect on the tuberculosis germ, turned up with the same chemical completely by coincidence. The chemical is isonicotinic hydrazide. The drug has been named Rimifon by Hoffmann-La Roche, and Nydrazid by Squibb. Another drug is an isopropyl derivative of the first, and this is a product of Hoffmann-La Roche, who have named it Marsalid. There is a third drug, a glycosyl derivative of the first drug, but this is considered of lesser importance.

Investigational and clinical work has been under way not only in New York City hospitals, but also at the Trudeau Sanatorium at Lake Saranac, N. Y., at Yale, Cornell Medical Center, and other places, and dramatic results are reported. Reports are given of bed-ridden patients getting up and walking. Temperatures are said to have dropped to normal within a week, and a feeling of well-being took the place of apathy. Appetites became ravenous, and there was little coughing and spitting.

Squibb issued a release after the news broke in the newspapers. In this release, very conservative in tone, Dr. Geoffrey Rake, Director of the Squibb Institute for Medical Research, said that "A new drug is needed, because the two most useful drugs now available, streptomycin and PAS, have definite shortcomings. Both these drugs are toxic in high dosage or in a long course of treatment. If Nydrazid proves as effective as results to date indicate, we may be able to start treatment in the early stages of the disease, when often we do not now dare to act because of the deficiencies of present drugs. In addition, by alternating the three drugs, we may be able to treat patients continuously over far longer periods of time with a vastly greater degree of safety and efficacy."

Squibb estimates its investment in an intensive research program to find a cure for tuberculosis at a million and a quarter dollars, which included investigation of some 5,000 compounds. Three papers describing laboratory experience with the drug are being presented in the American Review of Tuberculosis in April, as well as papers describing the clinical work that has been done.

The very surprising thing about this new drug, which was synthesized independently by these two drug houses, is that it is not a new chemical compound. Isonicotinic hydrazides were described by two Austrian chemists, M. Meyer and J. Nally, in Montshefte der Chemie in 1912 (vol. 33). This means that if the drug is eventually released for use by the Food and Drug Administration, anyone will be free to make it and to market it. However, manufacture of the chemical faces a serious raw material shortage. The raw material necessary is gamma picoline, which is 4-methylpyridine. Pyridine and all its derivatives are in extremely short supply as the quantities coming from coal tar are insufficient to fulfill demands. Perhaps it will be necessary eventually to turn to petroleum as a source of pyridine.

Schering Reports for 1951

SCHERING Corporation sales for 1951 declined for the year 1951 to a total of $15,444,108, compared with $16,177,655 for 1950. Sales of domestic ethical products were up 4 per cent to a total of $10,763,653, the increase resulting mainly from increased sales of antihistaminics and of products introduced during the year. Sales in all other divisions were lower than in the previous year, the drop in sales of the proprietary antihistaminic (Inhiston) accounting for the major part of the decline.

Net income before taxes totaled $2,859,324, representing an increase of 2.5 per cent over $2,785,153 for 1950. The increase, despite lesser dollar sales volume, resulted largely from reductions in proprietary and cosmetic selling costs. Net income after taxes declined 21 per cent to $1,374,324, compared with $1,735,125 for 1950.

In 1951 several new products were added, according to Schering Corporation President Francis C. Brown. In the hormone field a combination of estrogenic-androgenic hormone preparation under the name of Gynetone

and a protein anabolic hormone, Methostan, were introduced in oral and injectible form. A product in the chemobiotic field was introduced early in the year. Penicombisul, a combination of penicillin with a triple sulfonamide in tablet form, featuring Schering's specialty sulfacetamide, Trinetose, and an antihistaminic expectorant cough syrup were also marketed in the first quarter of 1951. Two significant products were added late in the year. Dormison, a short-acting nonbarbiturate hypnotic is for use in simple insomnia. This product is said to act quickly, and to be rapidly and almost completely metabolized in the body, not to depress respiration, and to show virtually no evidence of habit-forming or addiction properties, and to be completely free of side reactions. Prantal represents Schering's first entry into the anti-cholinergic field and is indicated in treatment of peptic ulcer.

Net sales in January 1952 advanced to $1,638,000, against $1,280,000 for January 1951. The increase occurred primarily in the domestic ethical division, although foreign sales also registered again. The increase was principally due to sales of recently introduced products, and sales of the company's ethically promoted antihistaminics were also substantially above the comparative figure for last year.

Upholds Refusal of Factory Inspection

MANUFACTURERS are not required to grant permission to Food and Drug as Administration inspectors to enter and inspect their plants, according to a decision of the U. S. Court of Appeals for the Ninth Circuit. This may sound like a queer decision, but the Food, Drug, and Cosmetic Act appears to be defective with its respect to its provisions for factory inspection.

A study of the law reveals that Section 301, which lists Prohibited Acts, includes: (f) Refusal to permit entry or inspection as authorized by section 704.

Section 303 of the law, which lists Penalties, reads:

"(a) Any person who violates any of the provisions of section 301 shall be guilty of a misdemeanor and shall on conviction thereof be subject to imprisonment for not more than one year, or a fine of not more than $1,000 or both such imprisonment or fine . . ."

But Section 704 of the law, which provides for factory inspection, reads:

"For the purposes of enforcement of this Act, officers or employees duly designated by the Administrator, after first making request and obtaining permission of the owner, operator, or custodian thereof, are authorized (1) to enter, at reasonable times, any factory, warehouse, or establishment in which foods, drugs, devices, or cosmetics are manufactured, processed, packed, or held, for introduction into interstate commerce or are held after such introduction, or to enter any vehicle being used to transport or hold such food, drugs, devices, or cosmetics in interstate commerce; and (2) to inspect, at reasonable times, such factory, warehouse, establishment, or vehicle and all pertinent equipment, finished and unfinished materials, containers, and labeling therein."

In construing Sections 704 and 301 (f), the Court said it was found to apply a strict construction since it is a criminal offense to violate the factory inspection provisions of the law, and added:

"Hence in construing this penal legislation, it is elemental that if it be subject to two rational interpretations, we must accept that favorable to the accused."

The Court expressed disagreement with the contention of the FDA that while Section 704 requires food and drug inspectors to ask permission to enter and inspect a factory, Section 301 (f) compels the factory owner to grant such permission by making refusal to do so a criminal act. On this point, the Court said:

"We do not agree with the government's construction of the two sections that while under Section 704 the inspector is to make entries and inspection *only* after requesting *and obtaining* permission of the owner, operator, or custodian, Section 301 (f) makes it a crime if the inspector's request is refused. That is to say, Congress by Section 704 gives the operator the right to refuse inspection and Section 301 (f) warns him that if he exercises the right so given him he is liable to imprisonment. It is true that 'the Lord giveth and the Lord taketh away' in a manner seemingly unjust to the minds of men, but here we are considering an act of Congress. Such a roundabout and unreasonable construction makes an absurdity of the requirement of the inspector of 'obtaining permission' . . ."

Such a construction would make worthless instead of giving effect to the words "after first making request and obtaining permission of the owner," said the Court, which maintained that there is no merit in the government's contention that these words do no more than provide for reasonable times for inspection, since Section 704 would provide for this if the phrase were omitted. The Court was of the opinion that if Congress desired to have food and drug representatives secure the inspections without obtaining permission it would have done so in the manner of the proceeding Section 703 of the Act, which provides for inspection of interstate shipments on mere request and dos not require the permission of the carrier. The Court suggested to the FDA that its remedy for enforcement of the inspection provision is an amendment of Section 704 to make it correspond with the simple provisions of Section 703.

The case in which this decision was an appeal from the District Court by the defendant in the case of Cardiff v. U. S. Naturally the FDA will appeal this to the U. S. Supreme Court, and until the Supreme Court acts, the decision is binding upon the courts in California, Washington, Arizona, Nevada, Idaho, Montana, and Oregon. Pending consideration by the Supreme Court, the FDA will bring actions to any manufacturers who refuse to allow inspections if they are located in places not within the above named states.

So far as we can see, the manufacturer in this case is only wasting his time and money. Granted that there is a defect in the law with regard to factory inspections, compulsory inspections are an integral part of this law and were so intended by Congress when the law was enacted in 1938. If the Supreme Court upholds the decision of the Circuit Court in this case, the condition will be remedied by a Congressional amendment in the shortest possible time. And when the question of such an amendment is raised—if it is—look out for what the FDA will try to slip over to give them greater power and more things specifically named in the law as subject to inspection.

Cold Wave Patent Licensing

SALES Affiliates, Inc. has announced completion of a non-exclusive licensing agreement under the McDonough cold permanent patents with Warner-Hudnut, Inc., covering the Richard Hudnut Home Permanent Wave. Included in this agreement on a license under the U. S. Patents No. 2,577,710 and

2,577,711, is a non-exclusive license under 22 similar patents and patent applications in other countries of the world. Other non-exclusive license arrangements under these patents have been made to various other internationally known companies including Procter & Gamble Company, Lever Brothers Company, Hans Schwarzkopf (Germany), L'Oreal-Monsavon (France), Daggett & Ramsdell, Inc., Lehn & Fink Products Corporation, and others.

27 Oldest Drug Houses

TWO more houses which are eligible for our list of Oldest Drug Houses have been brought to our attention. The first of these is Solon Palmer, quite generally referred to as America's Oldest Perfumer. However, Solon M. Palmer points out that this company, which opened for business on August 13, 1847, has been the manufacturer and distributor of Palmer's Lotion, an antiseptic lotion for external use, since 1948. He says further: "There have been very few 'business days' in the past 104 years when our daily shipments have failed to include Palmer's Lotion."

The second new entrant is none other than Lydia E. Pinkham Medicine Company. Stating that they feel pretty hoary with age up in Lynn, Massachusetts, H. E. Smith, assistant to the president, says:

"Lydia E. Pinkham's Vegetable Compound has a recorded sale in April 1875. At that time the Vegetable Compound was sold by a proprietorship type of business standing in the name of William Pinkham (Lydia's son). In 1881 it was sold by a partnership known as Lydia E. Pinkham's Sons and Company. In 1882 the present company was incorporated and has remained as such until the present." He wants to know if the company qualifies to slip in ahead of Arlington Chemical Company and Eli Lilly, to which our answer is "yes."

The list starting with the first known drug manufacturer and ending arbitrarily with Eli Lilly because they were the last on the original list of eight manufacturers from which the present list has been created, now stands at 27. They are:

Caswell-Massey Co. Ltd.	1752
Schieffelin & Company	1781
The Tilden Company	1824
S.S.S. Company	1826
The Wm. S. Merrell Company	1828
McKesson & Robbins	1833
Strong Cobb & Co.	1833
Boericke & Tafel	1835
Otis Clapp & Son	1840
Smith, Kline & French	1841
Carroll Dunham Smith Pharmacal Co.	1844
Sharp & Dohme	1845
Solon Palmer	1847
Chicago Pharmacal Company	1855
Hance Bros. & White Co.	1855
William R. Warner & Co.	1856
E. R. Squibb & Sons	1858
Reed & Carnrick	1860
Wyeth, Inc.	1860
The Burroughs Bros. Mfg. Co.	1863
Buffington's	1865
Parke, Davis & Company	1866
Henry K. Wampole & Co.	1872
Chilcott Laboratories	1875
Lydia E. Pinkham Medicine Company	1875
The Arlington Chemical Company	1876
Eli Lilly & Company	1876

Caswell-Massey and Lincoln

INTERESTING news of the connection of the oldest drug house in the country—Caswell-Massey Co. Ltd.—and Abraham Lincoln has been brought to our attention by Ralph Taylor, vice-president of that firm. He writes:

"The male members of the Caswell clan are all distinguished by the fact that they have prominent noses, lantern jaws, bushy eyebrows and powerful frames. They all look more or less like Abe Lincoln. In fact, several have played him in the movies and in historical pageants, etc.

"Acting on a hunch several years ago, I checked the geneological tables and, lo and behold, found that Old Abe was a direct descendant of the seventh child of the first Caswell to land in America in 1668! So when you look at the wonderful features of this great man you are looking at a Caswell!

"To cap it all, Our Mr. Massey, of Canadian origin, was a collerateral descendant of the Raymond Massey family. And the role of Lincoln is considered Raymond Massey's greatest performance!"

Durham-Humphrey Regulations

PROPOSED regulation for enforcement of the Durham-Humphrey Amendment to the Food, Drug, and Cosmetic Act reveal that it will no longer be necessary to restrict the labeling of drugs restricted to prescriptions sales solely to the prescription legend. Because of the fact that the amendment prohibits the sale of these products over the counter, directions for use can and must now be included in the labeling of prescription items. In the case of drugs with which the practitioner is familiar, information may be restricted to the recommended or average dose; the route of administration; and the quantity or proportion of each active ingredient. The FDA feels that:

"This information will be helpful, to physicians and pharmacists in every-day prescribing and dispensing of these drugs. Other information regarding their therapeutic properties, indications, and directions, which was formerly excluded from the market package, could be furnished in the form of a package insert under the proposed regulations."

Because the prescription legend to appear on restricted products is part of the amendment as enacted by Congress, the exact wording of this legend as given in the statute must appear on the label on the effective date of the law which is April 26, 1952. This legend reads: Caution: Federal law prohibits dispensing except on prescription.

However, the FDA proposes to grant manufacturers a full year from the effective date of the law to make the other changes in the labeling of their prescription products. So it will not be necessary for manufacturers to give directions for use on prescription products until April 26, 1953.

The FDA says further:

"The proposed revised regulations relating to directions for use retain the present provision which declares that directions for use may be inadequate if they do not include appropriate directions for all the conditions for which the manufacturer or distributor of the drug offers it, either by labeling or by its written, printed, oral or graphic advertising.

"Drugs labeled with adequate directions for use for the conditions mentioned in their labelings are sometimes represented in printed advertising or in 'health lectures' as remedies for disease conditions not mentioned in the labelings. This constitutes misbranding.

The mere fact that a drug may be useless for a condition for which a health spieler recommends it and that, therefore, it would be impossible to write adequate directions for its use, does not excuse the promoter. If for example, he offers his medicine for diseases of the heart, he assumes the obligation of providing adequate directions for its use in the treatment of heart diseases and may be penalized if he fails. The courts have so held."

"In the case of a drug sold to a physician," says the FDA, "if the label gives the physician essential information as to the composition of the article and if it is a drug with which physicians are well acquainted, no directions are required.

"No directions are required on drugs sold in bulk for manufacturing, processing or repacking or for filling prescriptions, but they must be labeled for such uses. However, prescription ingredients that are commonly sold for self-medication and that are safe for such use must bear directions. If the bulk drug or prescription component is a restricted drug it must also bear the mandatory caution notice on its label."

Fair Trade Act Hearings

THE House Committee on Interstate and Foreign Commerce held hearings on the McGuire bill last month and advocates and enemies of Fair Trade appeared before the committee. Twenty-nine representatives of manufacturers, wholesalers, and retailers in the fields of drugs and cosmetics, tobacco, photographic equipment, radio and appliances, jewelry, grocery, bookselling, hardwares, and stationery told the committee the economic, social, and legal reasons for the restoration to full strength of Fair Trade which has been seriously crippled by the Schwegmann and Wentling decisions. This they claimed should be accommplished by enactment of the McGuire bill or an amended version of it.

Presented to the committee were graphic case-histories of the plight of small retailers since the Schwegmann decision; a report on price research down to January of this year which showed how fair trade prices have benefited the consumer by resisting inflation; documentation of the recent growth of giant retailing that has made fair trade still more essential to the survival of small business. Also presented were suggested revisions of the McGuire bill designed to plug any loopholes with respect to the Schwegmann and Wentling decisions. Drafted by the country's top fair trade lawyers, the proposed amendments are expected to be included in H.R. 5767 as amendments before the committee reports the bill to the House.

Witnesses for drug industry associations were: Maurice Mermey, Bureau of Education on Fair Trade; Herman Waller, N.A.R.D.; Dr. F. J. Cullen, Proprietary Association; E. Allen Newcomb, N.W.D.A.; Nicholas S. Gesoalde, New York State Pharmaceutical Association; Roy Warnack, California Pharmaceutical Association; Herman Levy, Maryland Pharmaceutical Association and Baltimore Retail Druggists Association; Marty H. Sasmor, Bronx County Pharmaceutical Association. A statement was also entered in the record from Dr. Robert P. Fischelis, American Pharmaceutical Association.

Appearing for individual companies in the drug field were: Harry A. Kimbriel, Eli Lilly & Co.; Hermon High, Vick Chemical Co.; Herman C. Nolen, McKesson & Robbins; Paige D. L'Hommedieu, Personal Products Corporation and Johnson & Johnson; Louis G. Bernstein, Coty, Inc.; Robert Hardt, Hoffmann-La Roche, Inc.; Dr. Robert L. Swain, Topics Publishing Co.; Godfrey M. Lebhar, Chair Store Age.

Opening the hearings was testimony from Representative Wright Patman who made public the just-concluded report of the House Select Committee on Small Business, calling for Congressional action to restore fair trade. The major portion of the first day's hearing was devoted to a presentation by Mr. Mermey who gave a comprehensive picture of all facts of fair trade in a summary of his 55 page brief.

Jack I. Strauss, president of R. H. Macy & Co., was invited by the committee to testify but declined. He offered to present his views in writing at a later time.

Barbiturate Legislation

ALTHOUGH a bill for Federal control of barbiturate distribution will most likely be introduced in Congress, the committee appointed by the National Drug Trade Conference to study the situation, wants no part of Federal control. This committee, headed by Dr. Frederick J. Cullen, executive vice-president of the Proprietary Association, delivered its recommendations to Dr. Carson P. Frailey, president of the Conference, and these are being transmitted to all members of the Conference. The committee was of the opinion that the individual states should enact laws declaring illegal sales of barbiturates by manufacturers, wholesalers, or other distributors to others than pharmacists, practitioners, or institutions licensed by law to dispense them.

Despite this action of the NDTC, however, Senator Hubert Humphrey, of Minnesota, is said to have requested the Food and Drug Administration to draft legislation for control of the illegitimate distribution of barbiturates. It is expected that the FDA will follow up its idea of drafting a law which would make illegal possession of barbiturates a federal offense. The fact that intrastate sales of barbiturates is one of the problems facing the Food and Drug Administration in any attempt to clean up the situation, has raised a question. However, in the enactment of the proposed legislation, the FDA would ask Congress to express the idea that illegal possession of stocks of barbiturates obtained in intrastate transactions constitute a burden on interstate commerce in these products. Other problems facing the FDA in attempting to control barbiturates are bootleg operations and careless prescribing by physicians.

FDA Investigates Colors

THE Food and Drug Administration is investigating the certified colors now approved for use in foods, drugs, and cosmetics to determine whether any of these colors have exhibited any signs which might lead to the belief that they are likely to produce injurious pathological conditions in the light of present-day scientific knowledge. This action came as the result of testimony before the Delaney House Select Committee on Chemicals, which testimony was to the effect that some of the certified colors might cause cancer. Foreign publications were introduced into the record of the committee by a witness to support this contention.

FDA Deputy Commissioner, George Larrick states that the investigation was undertaken when it was discovered that excessive amounts of some colors in food products caused toxic reactions. This was in-

dicated several months ago when a number of children in a mid-west community became ill after eating candy in which large amounts of certified colors had been used to create new color effects. Mr. Larrick says that even though the candy incident seems to present a question of colors proving toxic under certain conditions, the FDA has decided that in the light of modern literature and methods of research, the colors also should be investigated from the broader aspect of possible pathological effects upon humans, and especially from the viewpoint of the carcinogenic properties of some of the colors. Some of the colors now being used, said Mr. Larrick, are forty years old. Pharmacologists of the FDA are now at work on this problem.

Dr. W. C. Hueper, chief of the cancer branch of the National Cancer Institute, in testifying before the Delaney Committee, referred to Light Green SF and the Yellow A-B Dyes. He said the light green had caused cancer in laboratory animals at the site of the injection, although there is no record of this dye producing cancer in humans. He suggested that another dye be substituted for this one. Dr. Hueper said the yellow A-B dye, when used in Germany, has been prohibited unless it is modified by the addition of sulfonic acid. He also said that arsenate compounds have a history of promoting cancer, and there are also instances of skin cancer developing among carbon workers.

F.T.C. Stops Foley's Ad Claims

FOLEY'S Honey & Tar Compound advertising is the object of an order of the Federal Trade Commission. The order is issued against Foley & Company, the manufacturer, and A. M. Salomon, advertising agent who trades as Lauesen and Salomon, both of Chicago. The order bans advertising claims that the product is a remedy or effective treatment for coughs due to colds. Other representations banned by the order are:

That the preparation is of any value in treating coughs due to a cold in excess of lessening the occurrence and severity of coughing spells for a period of not over one-half hour. That it will shorten the total period during which coughing due to a cold will persist. That it supplies a therapeutic dose of terpin hydrate or that its terpin content will have any beneficial effect in the treatment of a cough due to a cold. That the therapeutic value of the product has been proven clinically by hospital's tests.

According to the Commission's findings of fact, the only value of the preparation when taken by persons suffering from a cold is as a palliative to bring about temporary symtomatic relief. "There is no known medication," says the Commission, "which will cure or shorten the duration of a cold or the underlying causes of a cough due to a cold. While such a cough may be temporarily suppressed, the underlying causes will remain. The value of the preparation is limited to its demulcent and mild expectorant properties."

Getting Doctors' Attention

BECAUSE of the steadily increasing numbers of detail men trying to get the attention of the doctors of this country, the physicians are becoming more reluctant to give them time for interviews, A. F. Gormley, vice-president of Schenley Laboratories, told the sales meeting of the Central Section of the American Pharmaceutical Manufacturers Association last month. "If the current trend in hiring more salesmen continues, this situation is going to get worse instead of better," he said. Hospital exhibits which afford the detail man an opportunity to meet and talk with "hard to see doctors—the real busy ones—the ones who write 75 per cent of the prescriptions in any given community," were suggested as a method of getting around the problem now facing pharmaceutical manufacturers.

Deodorant Tablets Not Taxable

THE DePree Company, manufacturers of Nullo, the internal deodorant tablet, recently received a ruling from Treasury Department that Nullo and Nullo Junior are not taxable at retail as are cosmetic deodorants to be applied to the body. The action was taken because of the fact that the Collector of Internal Revenue, Des Moines, Iowa, had issued a statement to all druggists in that state that all body deodorants were taxable whether applied externally or taken internally in pill or tablet form, and also that breath sweeteners (except candy, chewing gum, Life Savers, etc.) were taxable.

However, the Bureau has now ruled that "Nullo, a chlorophyll breath deodorant in tablet form which is to be taken internally, is not a toilet preparation or similar substance within the meaning of section 2402 of the Internal Revenue Code or the regulations of the Bureau and sales thereof are not subject to tax. The product, Nullo Junior, which is also in tablet form and which is recommended for breath odors due to foods, beverages, and tobacco does not come within the scope of section 2302 of the Internal Revenue Code and is not subject to the tax thereunder."

Business Outlook

PREDICTING personal income for 1952 of $266 billion, Malcolm P. MacNair, Lincoln Filene Professor of Retailing, Harvard Graduate School of Business Administration, said that $32 billion of this will go for taxes at present rates, leaving a disposable income total of $234 billion. Voluntary savings, now running at the rate of $21 or $22 billion, will fall to $16 billion by mid-year, so that there will be an indicated or desired personal consumption figure of $216 billion. Goods and services available for civilian consumption during the year are forecast at $204 billion, leaving an inflationary gap of $12 billion, which should appear as of mid-year.

Such an inflationary gap, Professor MacNair told the National Retail Dry Goods Association, is by no means a large figure in light of such total magnitudes as a $347 billion gross national production. An inflationary gap of that size could be nullified by a further moderate increase in the rate of saving, by a greater-than-projected increase in output, by a reduction in the government's requirements for defense goods, by a greater-than-expected decline in private capital formation, or by any combinatan of these and other factors.

"Nevertheless," said Professor MacNair, "these prognostications certainly don't add up to anything like a prospect of substantial *deflation* in 1952. Perhaps the most logical forecast to base on them is that business activity, employment, output, and prices will be more or less level for the early part of the year but will all tend to rise somewhat by the middle of the year, with renewed inflationary pressures becoming apparent before the end of the calendar year."

BLACK STAR PHOTO

Factors Governing To

AT THE turn of the century, there were about 3 million people over 65 years of age in the United States, which represented about 4 per cent of the total population. 1951 surveys reveal 12 million of our populace who have passed this mark. Expressed in smaller numbers, this means that 1 out of every 13 persons is 65 or older. It is readily apparent that the number of "oldsters" has quadrupled within the last 50 years. Predictions are that by 1960, our population will contain 14 to 18 million persons who will have attained nearly three score and ten, and that by 1980 more than 20 million citizens will be in a similar category. The average life span today stands at the all time recorded high of 68.2 years. It required four decades to extend our lives 21½ years. Man at long last is making a feeble but definite approach towards the fulfillment of his allotted years. This brings us to an intriguing question—what is the true life span.

It is fact that four times as many people have extended their stay on this planet to 68.2 years as did 40 or 50 years ago. But relatively few are living beyond this span. White males who reach 60 in the United States today, have a life expectancy of not quite 16 years, which is no greater than statistics indicated a century ago. White women today who have survived through 60 winters have a life expectancy of just under 18 years—less than a year more than women of a similar age could expect in 1850. In other words, many more individuals are attaining so called old age, but old people, (old by our present concepts of age), are not living appreciably longer than one hundred years ago. This would seem to suggest that the true limit for this vale of tears to be about 75 to 80 years. Gerontologists do not accept these figures. They feel the upper limits lie between 120 and 140 years. At the moment this seems sheer fantasy. However this theory should not be too abruptly dismissed since there is some foundation of support. To learn of nature, we must study nature—

a nature which has not had the brain power to radically and perniciously alter the blueprint of living as originally designed. This is exactly what civilization has done to Man. So far as could be determined by the writer, it seems that every mammal, which lives in the manner and intent normal for him, lives six to seven times its maturity age. The horse matures in about three years and dies in the neighborhood of eighteen years. The dog reaches full growth at about two and lives twelve to fourteen years. This same formula is applicable to the Rhesus monkey, cat, lion, bear, giraffe and probably many others. Man's maturity age is 21. He should, by analogical deduction, have a true life span of between 120 and 140 years.

As previously mentioned, statistical data manifests the average life span now to be 68.2 years—about half the potential years genus homo could live. However the gift of 21½ years of extra life is not to be sneered at. This gain required the past 50 years for its achievement. Death, exclusive of traumatic destruction, is the end point of two broad types of disease; infectious pathologies which are caused by the invasion of pathogenic organisms; degenerative disease which is the structural and functional deterioration of one or more physiologic mechanisms. The extra 21½ years of life we now enjoy, is the reward for a substantial victory in the ancient war of Man on his unseen enemies of the microscopic world. While Man is the beneficiary, he cannot claim credit for destroying the foe. The battle was fought and won by an ally. Its name is chemotherapy. Man's resistance to infectious disease is still weak. The frequency of microbic attack of the respiratory, urinary and gastro-intestinal tracts has not declined nor have many other communicable diseases and septicemias. But now instead of depending upon physiologic resistance, artificial assistance is immediately employed or even prophylactically implemented, with invariable success. The fact remains, there has not been any sign of improvement in Man's own ability to cope with bacterial invasion. The sulfas inaugurated the chemotherapeutic era. These agents did render a service but left much to be desired because of undesirable side effects. However the sulfas were the original and a powerful impetus to chemotherapy—hastening the advent of the antibiotics. Penicillin, streptomycin, aureomycin, chloramphenicol, and terramycin are in command today. These agents have wrought a fantastic devastation upon those pathogenic organisms which seek to invade and destroy the human body. Equally miraculous and desirable is the fact that they exhibit little or no untoward reactions. This is particularly true of terramycin.

With the exception of "TB", the infectious diseases have almost been conquered. This includes such grim reapers as the pneumonias and other respiratory tract pathologies. The septicemias, urinary, oral, ocular and other types of infections are under practically complete

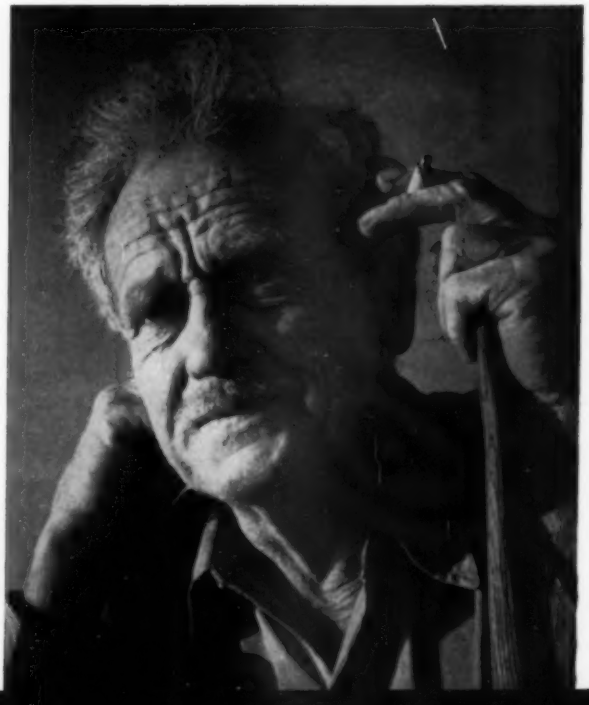
(Continued on page 416)

Today's Life Span

by L. Stambovsky

WIDE WORLD PHOTO

BLACK STAR PHOTO



Dandruff

by Milton A. Lesser

IF ANCIENT medical writings are any indication, conditions of the hair and scalp were of major concern even to the pyramid-building Egyptians. Today, the same problems prevail and millions of dollars are spent each year for hair care products. The records show that a good proportion of this money goes for the purchase of products to prevent or, more commonly, to remove dandruff, which may be the forerunner of more serious conditions.

Dandruff affects many millions of people. According to Savill,[1] an authority in this field, the commonest malady of the scalp is the state of scaliness popularly known as dandruff or scurf. In general, dermatologists have estimated that dandruff attacks 75 to 95 per cent of American scalps.[2] In voicing an opinion expressed by other students of the subject, Goodman[3] points out that dandruff seems to be an accompaniment of civilization. The condition occurs in childhood, but is a more common disorder of adult life. Like baldness, dandruff is found more often in men than in women. Few city dwellers, says he, escape some degree of dandruff. This is due to the fact that dusty rooms, stagnant air and overheated, unventilated offices and factories are contributing causes to scaliness of the scalp.

Goodman warns that the first signs of dandruff should not be disregarded, for although the condition may not be serious at the time, there is no guarantee that it will remain harmless. Indeed, dandruff may be a warning signal, because the condition usually gains a foothold when the general health is running down. Dandruff may remain a simple condition, but in many cases it is a complication or symptom of the more severe skin disorder known as seborrheic dermatitis.

Dandruff usually accompanies dull lifeless hair. A scalp affected with dandruff looks untidy and uncared for. The appearance of dandruff scales in the hair and on the clothes is a source of annoyance to fastidious people. Aside from this annoyance, neglect of simple dandruff produces no bad effects in some persons. With many other people, however, the hair often becomes dry and brittle, shows a tendency to split, and a certain amount of hairfall may follow.[1]

The debate as to whether there is any relationship between dandruff and falling hair is one that has raged for years without full agreement. Some dermatologists[1,2] feel that there is no direct association between dandruff and loss of hair. Many people have had the scaly condition on and off during their lifetime and yet have suffered no loss of hair. Conversely, some men have become bald without ever having had any of the several types of scaling of the scalp.

However, as noted by Harry,[4] while dandruff itself does not produce any true or permanent loss of the hair, it does seem to reduce the natural protective qualities of the corneous layer of the skin. Pertinent in this connection is a comment in the *Journal of the American Medical Association*[5] to the effect that most textbooks state that "dandruff predisposes to bald-

ness." It is also remarked that dandruff is generally considered a pathological condition.

Similarly, Levin and Behrman[6] have observed that simple dandruff is a notorious offender in the realm of progressive alopecia. In his chapter on alopecia, Mitchell-Heggs[7] states that a scalp showing diffuse scaling is usually excoriated because of itching and scratching, and rapidly becomes secondarily infected. This process, says he, is accompanied by a gradual development of baldness on the vertex and scalp at the junction of the frontal and temporal regions.

Aside from such associations, dandruff may be involved in the appearance of other disorders. For example, Simon[8] considers human dander as an important cause of infantile eczema. More recently, Hickey[9] reported that dandruff plays a well established and important role in the etiology of blepharphoritis. This is a common eye condition characterized by inflammation of the eyelids.

Dandruff may be classed as the dry type or the oily type, or it may be a prominent sign of seborrheic dermatitis. It has been said[10] that persons of dark complexion seem to show a tendency toward the oily form, while blondes are afflicted with the dry type of dandruff. There also seems to be a familial tendency to have dandruff.

A system of classifying dandruff on the basis of these three types is used by many dermatologists. However, some authorities[11,12,13] do not consider the dry and oily types as separate conditions but rather as clinical forms of seborrhea or seborrheic dermatitis. Mitchell-Heggs,[7] for example, says that seborrheic dermatitis first appears in its mildest form as a scaling of the entire scalp. The mild degree of this condition is known as pityriasis capitis or dandruff and it is to be found in a large proportion of otherwise normal adolescents and adults. The scales are thin, dry and white, and are easily shed. Except for this scaling, the scalp appears normal. There may be a little itching, but it is seldom troublesome.

This form of dandruff is also known as pityriasis simplex copitis and pityriasis sicca. Neglect of this mild condition with progression of the seborrheic state leads to the development of oily dandruff or pityriasis steatoides. In this type of dandruff, the scales are massed together by the imperceptible serous exudate from the scalp. The secretions of the scalp become mixed, not only with the flakes or scales, but also with extraneous materials, like dirt and bacteria, causing a matting at the base of the hair shaft. In this condition, the scalp is highly susceptible to various infections with consequent loss of hair.[14]

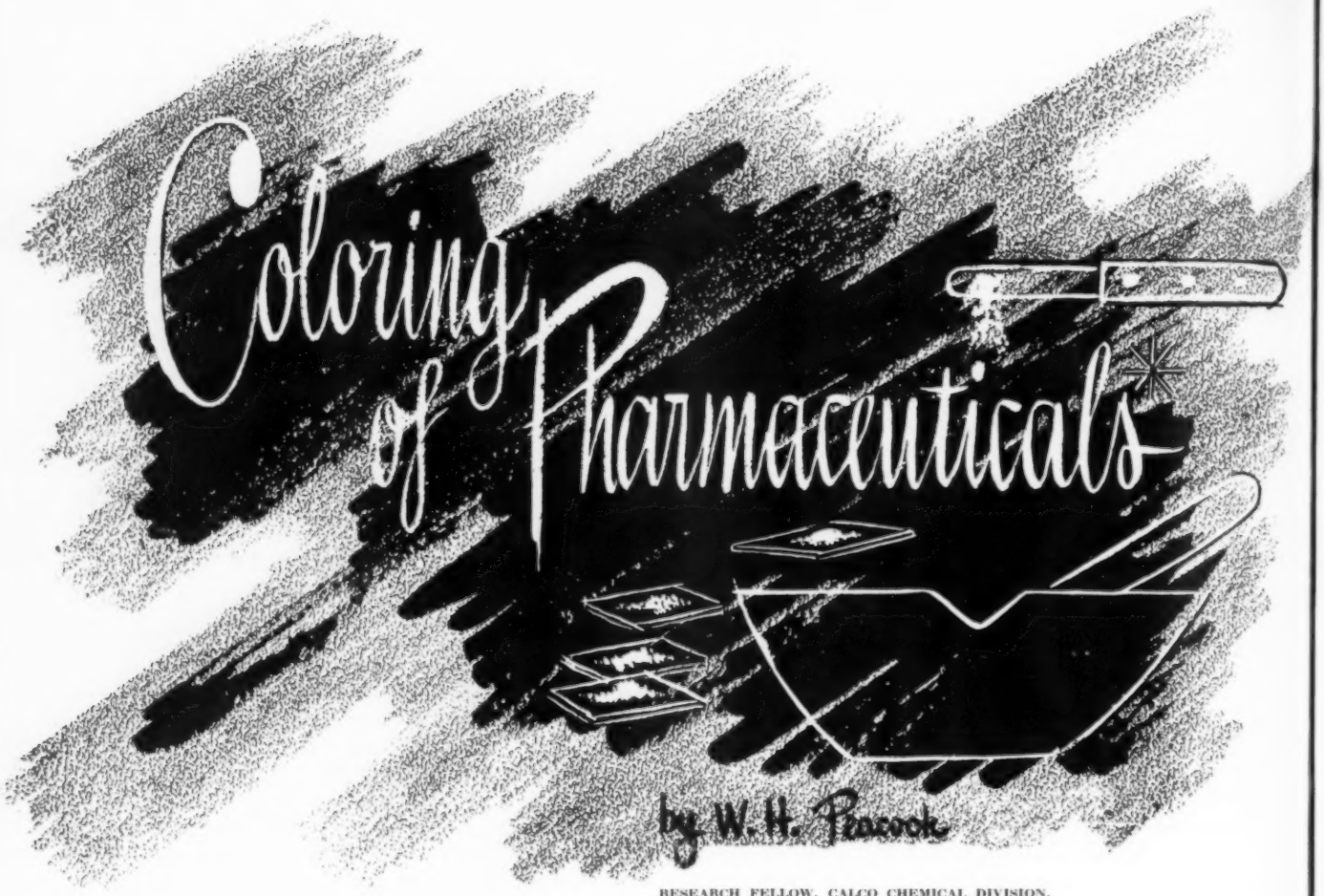
The scaliness associated with simple dandruff is really a flaking off of the upper layers of the epidermis.[1] Hence, dandruff is actually a manifestation of a normal physiologic process during which dead keratinized cells are constantly being shed over the entire skin surface. The process is more noticeable and objectionable on the scalp, however, because the hair enmeshes the flakes along with the accumulated oily secretions and extraneous debris. The varying degrees of dandruff among different people may be attributable to certain physical factors or to constitutional predisposition.[15]

Among the physiologic factors which may aggregate the shedding of dead cells are a lowering of general health, poor nutrition, and overindulgence in sugars and starches. Neglect of the hair and scalp, overexposure to the drying effect of sunshine and wind, the frequent use of strong shampoos, and the employment of unsuitable, irritating lotions and "tonics" may also be contributing causes of dandruff.

Thus, as noted by Sulzberger and Witten,[11] many possible causes of dandruff have been suggested. In the opinion of these dermatologists, dandruff is most probably the result of several factors acting simultaneously or following one another in close succession.

(*Continued on page 420*)

PHOTOS OGILVIE SISTERS



RESEARCH FELLOW, CALCO CHEMICAL DIVISION,
AMERICAN CYANAMID COMPANY

Part I

THE subject of color in pharmaceutical products may be divided for discussion into two topics, namely, (1) the psychological response of purchasers and patients to color and (2) the technology of the application of coloring agents—dyes and pigments to pharmaceuticals.

The first of these topics would cover the profound effect of color on the sales appeal of products and on the acceptance of drugs by finicky patients. The color problems involved, however, are more or less common to most merchandising businesses. They will not be reviewed in the present discussion.

The second topic, the application of coloring agents to drugs, has features of specific interest to pharmaceutical chemists. A complete review of these applications would be a lengthy study. The present discussion, therefore, will touch upon some of the practical details of using synthetic colorants for coloring drugs, including some notes on methods and factors influencing the solubility of dyes and several rule-of-thumb guides as to their probable solubility properties; some plant experiences in "trouble-shooting" unexpected difficulties encountered in coloring drugs; data on the resistance to reagents and other application properties of thirty specific dyes; and some of the factors to be considered when selecting colorants for coloring pharmaceutical products.

*Presented before Research and Development of American Drug Manufacturers Association, Nov. 10, 1951.

The Coloring of Drugs is a Specialized Art

It may be of interest to point out that the coloring of drugs should not be assigned to untrained personnel. In every field of professional work with coloring agents the colorist needs a knowledge of the phenomena of color[2,8] and of the physical[14] and chemical properties of specific coloring agents[6]. He must not be completely, nor incompletely "color-blind", but rather should possess a normal physiological and psychological ability to perceive color[3,7,15]. His efficiency will be affected by his skill in the art of color matching and familiarity with the many factors influencing the judging of color effects[10]. In the specialized fields, such as the manufacture of pharmaceutical products, some experience in the process engineering involved is also a prerequisite. In addition, it is essential to know the legal and ethical restrictions that have been placed both in the United States and in foreign countries on the use

of colorants in drug trade products[4,5]. Each phase of these qualifications could be the subject of a lengthy discussion.

Classification of Coloring Agents

It is a great convenience in coloring work to classify the colorants used into groups and to use data tabulations. There are a large number of synthetic coloring agents. The 1951 edition of the Year Book of the American Association of Textile Chemists and Colorists (A) lists 820 colorants as currently being made in the United States, and also lists about 10,000 of the sales names under which they are sold to the textile trade. This is only about one-half of the number of coloring agents known and listed in other literature.[13] In addition, thousands of derivatives and mixtures are possible. Fortunately, it is practical to classify these numerous colorants into groups quite helpful for reference and discussion, and a few of these will be mentioned.

"Dyes" and "Pigments"

1. Colorants can be conveniently classified into two broad groups, namely "dyes" and "pigments". The basis of such a classification may be some physical property and their solubility of insolubility is usually used, as follows:

a. "*Dyes*"—Those colorants which are soluble in some commonly available liquid, such as water, alcohol or oils, are classified as "dyes".

b. "*Pigments*"—Those colorants essentially insoluble in such liquids, or in any medium in which they are designed to be used, are classified as pigments.

2. As might be expected there are occasions when the distinction between a dye and a pigment is not sharp. For example, D.&C. Red No. 22, eosine, the sodium salt of tetrabromofluorescein, is extremely soluble in water and, therefore, is a "dye". D.&C. Red No. 21, bromo acid, the hydrogen salt or color-acid of tetrabromofluorescein, is insoluble in water and, therefore, is a "pigment". Yet, in certain media, such as castor oil, D.&C. Red No. 21 is soluble to some extent and in this case would act as a "dye". Again, D.&C. Red No. 21 will dissolve in alkaline water, forming a solution of D.&C. Red No. 22. However, it is only rarely that such difficulties of classification are of practical importance.

3. One usefulness of these dye-pigment classifications lies in the practice of some colorists first to try dyes for coloring liquids and first to try pigments for coloring powders; although dyes are usually used to good advantage for most products. In this discussion therefore, soluble colorants will be called "dyes" and insoluble colorants will be called "pigments".

Certified Colorants

Not all of the 820 colorants made in this country may be used legally in drugs for only 117 are on the certifiable lists in the United States. Of these, 64 are water- or organo-soluble "dyes" and 53 are "pigments". However, 15 of these "pigments" can be brought into solution under certain conditions, and under those conditions they act as "dyes". These 117 colorants are the tools with which pharmaceutical colorists must do their work.

These certified colorants have been classified into three groups by the Food and Drug Administration as follows:

1. F. D.&C. *dyes* legally usable in food, drugs and cosmetics. It should be noted that no pigments are certified for use in foods.

2. D.&C. dyes and pigments legally usable in drugs and cosmetics.

3. Ext. D.&C. dyes and pigments legally usable in drugs and cosmetics destined for exterior use only[4,5]

The probable bases for these classifications were the relative frequency of use of the colored products and the physiological effects of the colorants.

Other Classifications

Many groupings of colorants are possible with reference to some physical property, such as *hue*, reds, oranges, yellows, etc.; and *solubility* in specific liquids—water-soluble, spirit-soluble, oil-soluble, hydrocarbon-soluble, etc. Groupings based on chemical properties have been found useful also including *constitution*—azo, triphenylmethane, xanthine, etc., and *resistance to reagents*, such as fastness to acids, alkalies, reducing reagents, etc. All such groupings have reference value and specific applications. Many of these data are given in Calco's Technical Bulletin No. 715, "The Application Properties of Certified 'Coal-Tar' Colorants", and therefore, will not be repeated here, except where especially needed in the discussion[7].

Some Notes on the Solubility Properties of Certified Dyes

Inasmuch as the dyes used to color drugs are usually in solution at some stage of the processing, a few notes on their solubility properties and the "know how" of dissolving them may be useful.

1. Sixty-four of the 117 certified colorants are soluble in water. Twelve of the pigments are also soluble in alkaline water. (See Table IV)

2. In making water solutions of dyes, it is preferable engineering practice first to paste the dye with hot water, stir well, then dilute with more hot water, cool to room temperature and dilute to final volume with cool water. It is advisable also to filter dye solutions before use.

3. In making alcoholic solutions of dyes, it is a preferable practice to use warm alcohol. Occasionally some dyes tend to yield sticky, gummy, viscous masses when wet with cold alcohol, yet they usually tend to go readily into solution in warm alcohol. Some plant solubility troubles have been traced to the use of alcohol chilled during long storage outside in freezing weather. If mixtures of water and alcohol are used, it

(*Continued on page 412*)

The Agar Industry of Today

by Frank Child III

JAPAN is the largest supplier of agar in the world; Korea used to be second, until the War began in June, 1950. Today, the last available stocks of Korean material are being used up. There are other sources of agar, but these industries are either in experimental stages, or of limited size capable only of serving the individual producing countries, with little left over for export. The questions naturally arise: Is agar more difficult to obtain now and is the price expected to go up? Some authorities say yes, definitely; others say no, there has been no change. Here are the findings.

Those of the negative view take the stand that demand for agar has been steady for a long time and probably will stay that way. Japan is the sole source of material on a commercial level, with other potential areas such as Korea, Australia, New Zealand and the United States remaining negligible, and what happens to Korea has little or no bearing on the world supply. Japanese agar, furthermore, is superior to the Korean, they state, and has no substitute. Its uses are well established, and no radical changes are expected in U. S. needs. They contend that even if a shortage should occur it would be temporary and could easily be remedied by procuring replacements from Japan in about 20 days. In fact, they report, Japanese sources have been sending frequent queries to this country asking about future needs.

While these sources of information are entirely sincere and positive in their declarations, there is sufficient evidence to encourage a study of the opposite views.

United States import figures serve as a reliable index of the chief agar producers throughout the world, since this country is the largest single consumer. These figures show that Korea exported agar to the United States in significant quantities beginning with 1948.

Japan has always been an undisputed leader in agar production and as far back as 1930, provided the United States that year with 397,958 pounds out of a total of 398,581 pounds, China and Great Britain making up the 623-pound difference. Ten years later, by 1940, we were importing 634,555 pounds, more than 1½ times as much, and again Japan was the major provider (623,429 pounds), with China making up the remaining 11,126 pounds. As soon as Japan entered the Second World War, the entire picture changed and by 1942 it

was sending a meagre 52,408 pounds to this country. China had built up its U. S. exports to 40,753 pounds. The following year the United States was able to get only 30,441 pounds of agar from Japan, which was the only source outside its own borders. In 1944 and 1945 this country received none at all from overseas, but was able to obtain some in Mexico.

It was during these war years that America began to build up its own agar industry. Until that time the facilities had been quite haphazard, but the loss of the Japanese market served as an incentive to enlarge it. During the war agar was listed as an essential item because of its important bacteriological uses. In 1944 the United States had eight manufacturers with an output in excess of 200,000 pounds; Mexico had two. This was short-lived, for by the end of the war, and with the return of cheap Japanese agars, the number of U. S. manufacturers dropped to five. Today it stands at one. Mexico now has no active producers.

Just after the World War, when China and Japan were both getting back on their feet, Korea began exporting agar. It shipped 54,910 pounds to the U. S. in 1948, amounting to a little less than a fourth of Japan's figure. During 1950, Korea sent 100,092 pounds to this country, and although this was but a fifth of Japan's exports for the year, it still added measurably to the available supply and far outstripped any of the other countries.

But the Korean agar also proved to be short-lived, for by early 1951 the shipments began to fall off, dwindling to zero in June of that year. Since that time New York dealers have been using up the last of the warehouse stocks. Now, there is none left, report those dealers who prophesy higher agar prices, and Japan is virtually the sole producer-exporter once again.

The total amount imported by the United States last year through October was 244,729 pounds, or just over a third of the year's total in 1950. The United States requires some 600,000 pounds of agar a year to meet all needs; yet the domestic production has plummeted to a low level since the 250,000-pound figure of 1945. That is the agar situation as it stands today.

This eleven-year progression of events is summarized in the following tabulation of agar shipments to the United States over that period of time.

	Mex.	*China*	*Japan*	*New Zeal.*	*Korea*	*U. K.*	*Canada*	*Total*
1941		32,413	565,059					597,472
1942		40,753	52,408					94,895
1943			30,441					30,441
1944	42,304							42,304
1945	11,723							11,723
1946	20,721	2,701	60,835	2,520			5	86,782
1947	35,038	50	238,860	1,000			14	274,496
1948	42,250	6,040	146,025		54,910		129	249,354
1949	29,445	6,280	226,101		51,272			313,098
1950	7,650	660	540,169		100,092	100		648,671
1951		100*	208,174*		36,505**			244,779*

*Through October, 1951.
**None received after June, 1951.

There is always the possibility that Japan will either build up its agar production or reserve a larger portion of its supply for the American Market—that is, if it is unable to meet U. S. needs at the present time. In that event, Korea would no longer be important as a supplier. Perhaps this is what some of the dealers had in mind when they said there was no shortage.

Those of the opposite view have a ready answer. "It is true that we will be receiving new-crop material from Japan this month and in April," they say, "but we are still beginning to feel the pinch of less Korean agar. The replacement cost of agar from Japan is too great." It is available from Japan, they report, but at too high a price. Instead, they have bought agar from other dealers right in New York to save money, and still they are just about breaking even.

To understand the situation further it is necessary to compare the various agar industries of the producing countries.

In America, the limited commercial area is centered along the Pacific Coast of Southern California; experiment stations are in North Carolina and Florida. Most of the California agar is extracted from the seaweed *Gelidium Carlilagineum* which is usually firmly attached to rocks in water ranging from 10 to 50 feet deep. Men wearing complete diving suits descend to the bottom of the ocean two or three times in one day, working for 1 or 2 hours at a time. They pull the seaweed off the rocks with their hands and stuff it in a rope-net basket which holds 70 pounds when full. A diver's usual daily yield adds up to some 1500 pounds. He can work about 120 days out of the entire year, as the time is limited to

(Continued on page 411)

PHOTOS AMERICAN AGAR AND CHEMICAL COMPANY

Prevention of Dental Caries

by George D. Wessinger, D.D.S., Ph.D.

ASSISTANT DIRECTOR
STERLING-WINTHROP RESEARCH INSTITUTE
RENSSELAER, N. Y.

PROBABLY no disease to which man is heir has received more study, elicited more discussion and resulted in more controversy than the one called dental caries. A few years ago, the Research Commission of the American Dental Association compiled 237 summaries by as many observers and investigators in twenty-six countries on their findings and conclusions on the cause and control of dental caries. A careful perusal of this monumental work reveals that there is complete lack of unanimity of opinion on any single phase of etiology, prevention and treatment of this widespread disease. Only on very few points does anything approaching a majority show any tendency to agree.

Three or four years ago a conference was held at the University of Michigan on the etiology and control of dental caries, attended by approximately 114 individuals who were actively participating in dental research in the United States. Out of this symposium, one conclusion was finally adopted unanimously which reads as follows, "Dental caries is a disease of the calcified tissue of the teeth. It is caused by acids resulting from the action of micro-organisms on carbohydrates, is characterized by a decalcification of the inorganic portion and is accompanied or followed by a disintegration of the organic substance of the tooth. The lesions of the disease predominantly occur in particular regions of the tooth, and their type is determined by the morphologic nature of the tissue in which they appear." It is generally accepted, therefore, by the majority of people working in this field of research that dental caries is brought about by acid-producing bacteria acting on carbohydrate food residue which adhere to the teeth after the mastication of food. These organisms, through a process of fermentation, produce organic acids at the tooth surface which are responsible for decalcification and the production of carious lesions. The precise organisms responsible for this acid decalcification of the teeth and the exact nature of the acids produced is still the subject of considerable controversy.

It would be unfortunate, however, if we were allowed to draw the conclusion from the above statements that research on the etiology, prevention and treatment of dental caries has been unproductive. Such is far from the case. Perhaps a more accurate picture of the present status of dental caries research would be to say that many investigators throughout various parts of the world are discovering pieces of a jigsaw puzzle. Some of these pieces fit together to form a part of a picture. Very probably we need more pieces in order to complete this puzzle, as well as someone with a flair for system and order and an understanding of relation-

*Fresented before Scientific Section, The Proprietary Association, Dec,. 1951.

ships in order to piece together a complete jigsaw puzzle revealing the entire picture which I think will ultimately emanate from these studies.

The purpose of the present discussion is to enumerate and attempt to evaluate a few of the methods which have been proposed for the prevention of dental caries. Due to lack of time, not all of the methods which have been proposed can be discussed and, due to our incomplete knowledge of the matter, it will not be possible to arrive at a complete evaluation of any of these methods. Time and experience alone can accomplish this.

It is well known in the dental profession that caries have a predilection for certain specific areas of the teeth. In general the areas which are predisposed to dental caries are those which are not self-cleansing, areas where bacteria can collect and remain undisturbed for long periods of time. Specifically, the areas in question are the pits and fissures of the posterior teeth, the contact points between all of the teeth and the areas along the gum line. These facts which have been known for many decades led one dentist by the name of Hyatt, some years ago, to propose that dental caries could be prevented by placing artificial restorations or fillings in all of those areas of the teeth susceptible to caries, within a short time after the teeth had erupted and before the ravages of caries could begin. There seems to be little doubt that such a method would be quite sucessful, at least in the great majority of cases. However, it also seems probable that most of us would be unwilling to accept this method of preventing dental caries as the perfect answer to this vexing problem. Even though we are willing to concede that it is an effective method, many people will find the idea of destroying sound areas of the teeth and replacing them with gold, amalgam or other filling materials at the cost of considerable money and time in the dentist's chair as completely repulsive. This has naturally led to a vigorous pursuit of other methods for accomplishing the same end.

One of the methods proposed and widely exploited, at least for a time, was the use of dentifrices containing urea or urea in combination with an ammonium salt. The history of this development is a long one and in fact goes back to the ancients who suggested the use of urine as a mouthwash for the prevention of caries. Most of the emphasis, however, for the use of urea and ammonium salts and dentifrices has come from Kesel and his group of co-workers at the University of Illinois. Following some observations by Stephan and others, this group demonstrated by *in vitro* experiments that urea and ammonium salts were effective *in vitro* in reducing acid formation when saliva was incubated with fermentable carbohydrates. These agents also appeared to be effective in destroying *Lactobacillus acidophilus* organisms which are considered by many to be the most responsible species for the production of dental caries. The data obtained from these laboratory tests suggested that 5 per cent diammonium phosphate and 3 per cent urea gave the best results. The laboratory studies were followed up in a limited number of patients where it was found that the use of a dentifrice or a mouthwash containing these agents was effective in reducing the *Lactobacillus acidophilus* count in a majority of the patients. More elaborate clinical studies were then carried out on approximately 1700 school children in Aurora, and Peoria, Illinois, and the results of these studies were published in the Journal of the American Dental Association during the latter part of 1950. The investigators concluded that the use of a dentifrice containing 5 per cent ammonium phosphate and 3 per cent urea was responsible for approximately a 12 per cent reduction in caries incidence during the period of study. Several recent publications by Hill and his group at Western Reserve University Dental School confirm some but not all of the laboratory studies by Kesel *et. al.* These investigators found that ammonium salts do inhibit the growth of *Lactobacillus acidophilus* at relatively high concentrations but this inhibitory effect is also shared by sodium and potassium phosphate. Furthermore, the inhibitory effects of ammonium phosphate could be demonstrated only at a pH more alkaline than 7. This suggests in part, at least, that the effects of ammonium salts may be due to their buffer action rather than a specific inhibitory effect of the ammonium ion as proposed by Kesel. Urea, in concentrations of 6 per cent, effectively inhibited the growth of *Lactobacillus acidophilus* and retarded growth at lesser concentrations. Furthermore, combinations of urea and ammonium phosphate together did not produce results which were significantly different than the effects of each substance employed alone. This is also in disagreement with the results reported by Kesel.

A recent publication by Chernausek and Mitchell of the University of Minnesota Dental School described the results of studies on the use of ammoniated dentifrices in the control of caries in hamsters. These authors found that daily brushing of the molar teeth of hamsters with a control and an ammoniated dentifrice resulted in significant reduction of caries experience of approximately the same magnitude. In other words, brushing the teeth reduced the caries incidence somewhat but the differences between the ammoniated and the non-ammoniated dentifrice were insignificant. A still more recent study from the University of Otago in New Zealand describes the results of studies on the effectiveness of an ammonium ion tooth powder in the control of dental caries in humans. Under the conditions of the test, the experimental ammonium tooth powder failed to reduce the annual increment of dental caries when its effect was compared with that of a control tooth powder. Furthermore, at the end of the study period there was no significant difference between the *Lactobacillus* count of the control and experimental groups. The authors conclude without hesitation apparently that the evidence in favor of an ammonium ion dentifrice must be viewed with considerable circumspection. When the studies summarized above, as

(Continued on page 386)

HELENA RUBINSTEIN PHOTO

Hair Conditioners

by Harry Hilfer

HAIR conditioning agencies have gradually been becoming a greater factor in the generalized cosmetic picture. There are several reasons for this trend all due to developments made within the past ten to fifteen years. Perhaps the largest contributing factor has been the advent of the home permanent wave, where the hair is subjected to rather a vigorous treatment which certainly removes more of the natural oil adhering to it than would ordinary washing. As a result of such a treatment the hair appears to feel dry and is further difficult to comb because of its tendency towards unmanageability when there is so little oily residue present. Another important factor has been the advent of the synthetic detergents which though they may not clean the hair any more thoroughly than a soap shampoo impart a somewhat harsh feel to it which makes the woman conscious of something missing. Comparisons between the effects of soaps vs. synthetic detergents as to cleansing ability is outside the scope of this article. I believe however, that women are of the opinion generally that the detergent type of shampoo is more apt to introduce the harsh-"feel" than is the soap.

There are now several different types of preparations marketed to counteract the "dryness" of the hair or the "harshness" complained of. All of them are dependent on much the same type of phenomena. In tracing their development, it should be remembered that previous attempts at "conditioning" the hair had been attempted but that these consisted of applications of oils, which though they accomplished their purpose, also had undesirable side-effects—such as the introduction of undesirable "greasy" films. The more recent and prevalent usage of cationic agencies was therefore more readily acceptable because of the comparative absence of these side effects. Actually the reaction between the quaternary ammonium compound—the cationic agencies most generally used—and the protein

molecules comprising the hair is a chemical rather than a physical phenomenon, since a complex is formed between the two—the reaction taking place between the (Rn)+ and the carboxy groupings in the protein. This reaction was first utilized by the textile manufacturers as a means of "softening" the woolens being used. Indeed the same reaction is further utilized to form a water repellent film, by heating so that a position of the cation may be destroyed after application—rendering the residual film insoluble and impervious to water.

The net effect on the hair, however, is to make it feel softer to the touch and to make it easier to comb. The choice of a proper quaternary is of great importance in achieving any desired result. The most popular agencies, generally consist of long molecular weight carbon chains such as the oleyl or stearyl, since in this range substantive effects are more pronounced. In addition, possibilities of irritation are reduced somewhat because the higher molecular weight bodies are less prone to produce irritations than are the lower membered chains. In any case investigators should be careful to check against possible irritational effects.

Administration of the conditioner in general—and certainly in the case of quaternary conditioners, is made after the permanent wave or the shampoo is complete. The preparation is usually sold in rather a concentrated form and instructions on the container specify the desirable dilution with water. The preparation after dilution is applied, allowed to stay on the hair a few minutes, and then rinsed. The usual setting and drying then follows.

As previously mentioned the advent of synthetic detergents in shampoos have introduced some problems because of the "harsh" feel they leave to the hair. A return to the older shampoo would not completely answer this complaint since the newer agencies perform decidedly better in hard water areas. Attempts have therefore been made to incorporate into the shampoo an agency that would mitigate against the harshness that would otherwise be evident. At the same time these further additions should help and be of advantage in making the hair more easily manageable. Quaternary ammonium compounds are not adaptable to use in conjunction with anionic detergents because of an incompatibility resulting from the reaction between the two different agencies to produce an insoluble and inactive complex. The use of quaternaries in conjunction with non-ionic detergents is a distinct possibility, but presently thought of as hazardous because of the bad experience caused by several products of this type that were on the market. Until further work is done on the mixture of the non-ionic and quaternary agencies so that the actual cause and extent of irritation could be minimized there is not likely to be any shift in this direction. The problem then boils down to the inclusion of a substantive agency which is not incompatible with anionic detergents.

In spite of the favorable reactions produced upon the public by the magic word "Lanolin", it is not a substantive agent and the amount that would remain fixed to the hair—if it were present in a shampoo it certainly would not exert any more than a psychological effect. There are other agencies which have been reported to exert a substantive effect from a shampoo, which are being examined for possible use in this direction. The literature on this phase of shampoo development is rather sparse and actually there is rather a great aura of secrecy associated with these developments. Among others, mention was made of certain polyethylene oxide esters and also certain types of amidic compounds of the higher fatty acids.

Procurement of any definite proof is rather difficult. From a laboratory standpoint it would be difficult to determine how much if any of these compounds would remain fixed to the hair after treatment with a shampoo containing them. A practical use test is difficult to perform since if one is dependent on opinions of women who test the product, variables may exist over which controls would be difficult. This would be true because over the years women are capable of forming marked likes and dislikes and there would always be a subconscious comparison made against a product which she has used in the past. Other influencing variables would be variations in the amount of soil present in the hair at different times different shampoos were tested.

I believe the most objective method of testing is to put the shampoos in the hands of a trained beauty shop operator who can almost instinctively feel the differences in the effects on the hair. If she were given two sets of samples one containing the "conditioner" and the other used as a control containing all the ingredients of the shampoo except the "conditioner" it would be possible to arrive at a fairly conclusive idea if she reported overwhelmingly in favor of one or the other after having washed, perhaps twenty to fifty heads of

(Continued on page 416)

HARRIET HUBBARD AYER PHOTO

Figure 1
1. Bausch and Lomb Binocular Microscope
2. 2 Spencer Microscope Lamps
3. Daylight Filter for Lamps

Differences in Skin Surfaces†

by Sture Johnson, M.D., Roy Kile, M.D.,** Maurice Fliegelman, M.D.** and J. C. Fix, B.S ****

ANY attempt to evaluate the effect of one variable upon another in any test should be carried out by methods which are as objective as possible under the circumstances. Unfortunately we cannot always conduct such a study by strictly objective methods. This is particularly evident from our past experience in the studies of the effect of topical application of soap and creams. These tests have indicated a need for procedures which would give permanent records, show more minutia, and minimize observer and subject fatigue. The importance of controlling the conditions under which the examinations are made has also become evident.

It is for these reasons that we have developed methods for subjective examinations which we would like to report to you.

Discussion of Methods

This set-up consists of a Bausch and Lomb binocular microscope mounted horizontally on a carriage which moves around a framework containing a center point chin rest. The lighting system consists of two Spencer microscope lamps mounted on either side of the microscope with their beams converging at its focal point. Daylight filters are used on the lamps. We have found this arrangement gives the most satisfactory impression when used at about seven magnifications.

This procedure shows minutia like the sebacious oils exuding from the pores, dirt in the pores, degree of vascular dilation, scaliness, and dryness of the skin. The detail brought out by the magnification gives a more accurate appraisal of the skin condition. Examiners using this method are more sensitive to changes that have taken place and their appraisal of the skin has been more consistent; that is, there has been less discrepancy among observers in evaluating the same subject. This would certainly indicate an improvement in the method of observation. Statistical analysis of the data definitely corrobates this conclusion.

We believed that by permitting the examiner to view the same general skin area easily and under a constant light condition, a reduction in observer fatigue would take place. In addition, by having the subject in a comfortable position it would enable the observer to conduct his examination unhurriedly. The consistently reliable data obtained from studies using this method plus the favorable examiner comments on the ease of grading would indicate to us that we had reduced observer fatigue.

Following is a detailed description of the photographic set-up that was used to provide permanent

*Head, Dept. of Dermatology, University of Wisconsin School of Medicine; **Practicing Dermatologists; ***The Procter and Gamble Co.
†Delivered before the Scientific Section, the Toilet Goods Association, December, 1951.

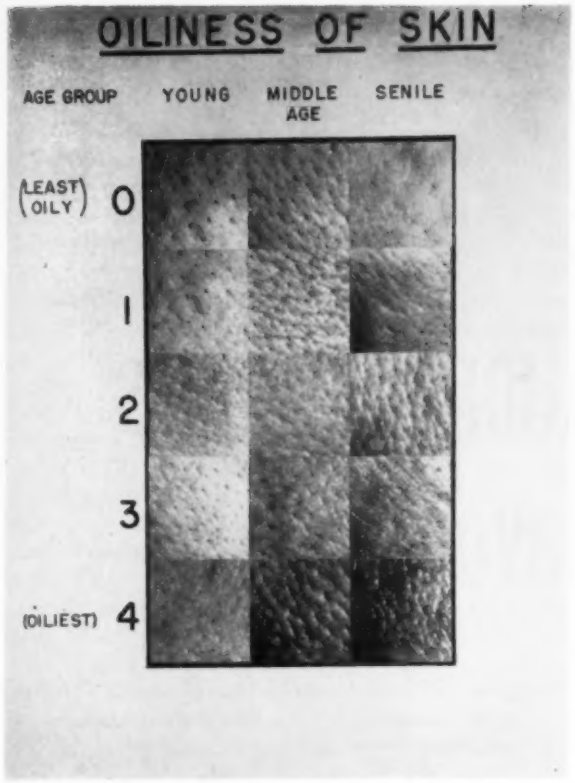


Figure 3

records of all examinations. Photographs were made of the same general skin area of each test subject for each test condition.

A 35 mm. Leica camera coupled with a sliding-focusing copy attachment was used with a one inch extension tube mounting a 50 mm. focal length lens. This arrangement allowed the lens to be brought about six inches from the area to be photographed and gave a 2x magnification on the film. Focusing was accomplished by swinging the whole camera assembly at a right angle to the tangent of the subject's face until the largest possible area was in focus on the ground glass. This made each macrophotograph have the same magnification and same maximum field in focus.

Light was provided by a Wabash Electroflash, Type R-1140, mounted about thirty inches from the subject's face and directed at about a 30° angle to give strong texture lighting.

Exposure was made by open flash at f.9 on Panatomic X film which was developed for 45 minutes at 68°F. in Microdol developer.

Prints were made on Platino F-3 paper developed 1½ minutes in Dektol developer diluted 1:2. The prints were enlarged 3½ times from the negative to give a total magnification of seven times.

This method gives a permanent record so that weeks later one can compare the skin texture of the same individual following different treatments. Where the photographs have been examined and graded, differences comparable to those observed directly have been noted.

The photographs obtained in these studies have been

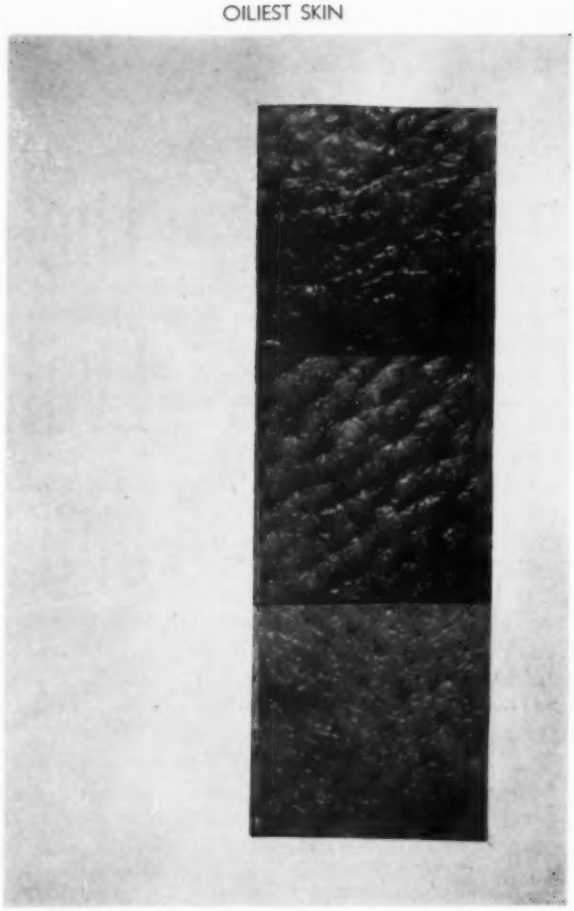


Figure 4

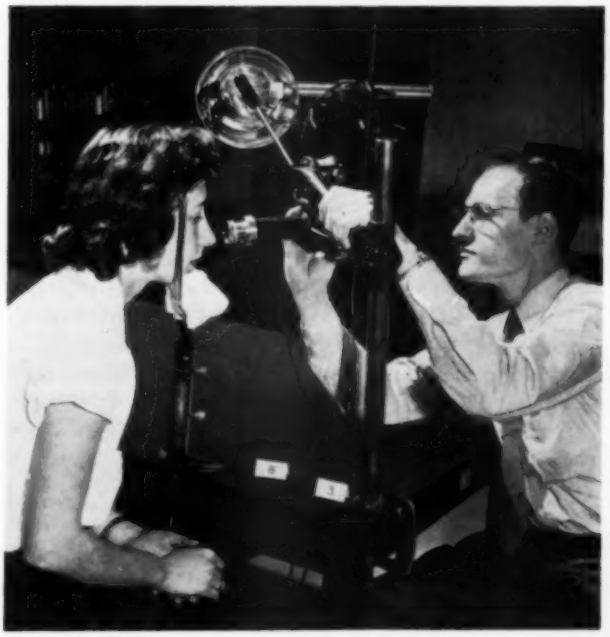
examined and from these were selected typical cases of oiliness and scaliness to conform to our interpretation of the numerical evaluation of these conditions.

In figure 3 we see the examples of oiliness from the

(Continued on page 604)

Figure 2

1. 35 mm. Leica Camera
2. Sliding Focusing Copy Attachment
3. One Inch Tube Mounting 50 mm. Focal Length Lens



The Evaluation of Odors and Flavors*

by Kurt S. Konigsbacher, William H. Danker and Ralph L. Evans. EVANS RESEARCH AND DEVELOPMENT CORPORATION, NEW YORK 17, N. Y.

THE problem of odor and flavor evaluation has become of increasing importance in various fields of manufacture for many years. This is true not only of products sold to the public on the basis of odor or flavor appeal such as cosmetics, perfumes, spices, foods, and beverages, but also of products with which odor is not ordinarily associated, for example textiles, rubber and leather goods, plastics, and many others. A customer's reaction to a product often is influenced by an odor or flavor which, although unconsciously perceived, can be highly persuasive. It is for this reason that the sales acceptance of a product by industry or by the public may depend on the control of odor and flavor; sales volume may be greatly increased by adequate control of these two factors.

This problem of odor and flavor control—involving the absence of undesirable, as well as the presence of desirable odors and flavors—sometimes is not clearly recognized. Many methods have been proposed for the control of odors and flavors but because of the lack of correlation between instrumental methods and human response, the food, perfume, and other industries still are employing the ancient taster. These "experts" are individuals with an acute sensitivity to threshold discriminations by experience or inheritance, but little has been established scientifically, or at least methodically, about their techniques. Industrial and research laboratories, therefore, finding themselves faced with the necessity of establishing the organoleptic properties of foods, cosmetics, and other products, have become increasingly aware of the importance of scientifically designed experiments and statistical analysis of the results as fundamental tools with which to tackle their problems. Because it now is recognized that more easily reproducible methods are necessary, sensory testing by a trained panel has become increasingly popular to the point where today large private organizations and even the government recognize panel technique as one of their most valuable aids in the control of odors and flavors.

Definition of Odor and Flavor

In order to discuss odor and flavor control, odor and flavor must be defined. Odor may be defined simply as anything that can be detected by the sense of olfaction. To explain the mechanism of olfaction is beyond the scope of this paper. However, several interesting theories, such as those outlined by Miles and Beck[1] and by R. W. Moncrieff,[2] have been proposed within the last few years. The subject also has been ably presented by Dean Foster,[3] J. W. Middleton,[4] and P. G. Lauffer.[5]

The definition of flavor is more complex because, as Crocker has mentioned in his book,[6] flavor is a combination of perceptions of the true taste receptors and the receptors of the sense of touch and odor. In addition, such perceptions as coolness, astringency, bite, and texture contribute to the pharyngeal sensation. This definition can be simplified by saying that flavor

*Delivered before Scientific Section, the Toilet Goods Association, December, 1951.

is a combination of odor and taste. With the sense of olfaction shut off, oil of peppermint, for instance, tastes weakly bitter and feels cool.

Methodology of Odor and Flavor Classification

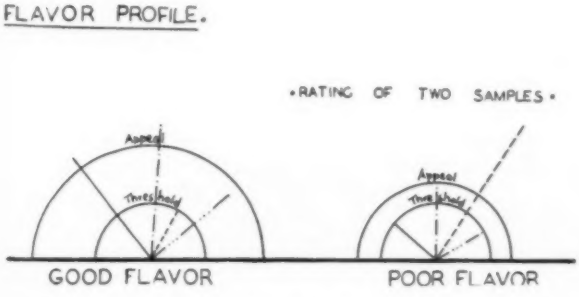
Control of odor and flavor by comparison of a sample with a series of standardized reference compounds has been attempted. However, the classification of odors is not a simple problem and never has been solved satisfactorily. One system that we have found useful is the Crocker-Henderson odor classification set,[7] which is based on the theory that every odor contains a fragrant, acid, burnt, and caprylic component, each one varying in strength from 1 to 8. The Crocker-Henderson reference set therefore contains 4 times 8 samples. Each odor then is expressed as a four digit integer, each digit indicating the strength of one of the four components; oil of Lavender, for instance, is classified as 6625 (6 for fragrant, 6 for acid, 2 for burnt, 5 for caprylic). Taste, of course, the second principle of flavor, is classified easily into four categories, sweet, sour, bitter, and salty.

It is doubtful, however, whether an odor analysis, as the one just mentioned, would be of much help to the average business man or even chemist because of its complexity. Sensory testing by a trained panel by means of simple binary systems, on the other hand, yields results that can be evaluated statistically and interpreted without difficulty.

Methodology of Panel Testing

Sensory testing by the panel technique falls roughly into two categories. The first employs rating scales and flavor profiles, the second simple binary test systems for organoleptic analysis.

A single or double rating scale is used when a number of similar products are to be compared, either as to their excellence with respect to individual preference or as to their similarity to a given standard. In either case the panel is requested to rate a number of test products in order, and to assign to each one an arbitrary numerical value, predetermined by the rating scale to be used. Such a procedure has been employed with good success by Peryam[8] and his group at the Food and Container Institute of the Quartermaster Depot in Chicago.



The organoleptic flavor profile technique, developed by Cairncross and Sjostrom,[9] and improved by Cartwright and Kelley,[10] consists of a semicircle, the area of which represents the total flavor or odor amplitude.

Individual odor components are designated by lines that originate at the center of the semicircle. In the improved method, threshold perception is indicated by the perimeter of the semicircle. The distance to which the lines extend beyond the perimeter of that semicircle indicates the relative intensities of the odor components they represent. An additional second larger concentric semicircle then is used; the perimeter represents the over-all flavor or odor appeal. This method has the distinct advantage of presenting flavor and odor evaluations graphically and of rating notes in the order of appearance. The method is, however, unnecessarily complicated for many evaluations and requires a panel of highly sensitive and specially trained observers, the presence of all of whom is required at the same time for testing and discussion of results. Where the panel is chosen from the laboratory or office staff, this is frequently impractical.

Binary systems of sensory testing include the Dual Standard Test, the Duo-Trio Test, and the Triangle Difference Test. The first two were developed in the Quality Research Laboratory of Joseph E. Seagrams and Sons in Louisville, Kentucky[11] in 1941 and 1942. The Triangle Difference Test was developed by the research laboratory of the Carlsberg Breweries, Copenhagen, Denmark,[12] where it has been used for control work and for selection of sensory testing panels.

In the Duo-Trio and the Triangle Difference Tests, the observer is requested to differentiate a sample from a given standard. He is not allowed to give any personal reaction to the sample as such. The observer must give an answer every time; answers of no difference are not permissible.

In the Duo-Trio Test, the observer is first presented with a control sample, followed by two samples in unknown order. One of them will be the same as the control, but the other will be different. He is to judge which is the different one.

The Dual Standard Test is substantially the Duo-Trio Test adapted for use with odor samples. Two samples, marked T1 and T2, are given and the observer is instructed to smell one and then the other until he is thoroughly familiar with the odor difference. He then is given a second pair of unmarked samples and requested to decide which corresponds to T1 and which to T2.

In the Triangle Test the observer is presented with three samples, two of which are identical. He is requested to state which one is the odd sample.

As Lockhart[13] states in his paper, which treats organoleptic analysis mathematically, these binary tests might be called "binomial tests," as the underlying mathematical concept is the binomial theorem. Although these test systems are binomial in the sense that a single judge may return only one of two answers to any one problem, we must examine the chance probabilities associated with each binomial system employed. The Dual Standard Test presents two

(*Continued on page 406*)

"Look... *a Perfect Closure* for Every One of My Products!"

Yes, only *MeritSEAL* offers such a wide selection of sizes, colors and liner materials to suit every need...

● Cosmetic manufacturers from coast to coast acclaim MeritSEAL for the luxurious, sparkling finish it gives to their products. Attractive, efficient MeritSEAL caps really help *sell* your cosmetics for you. Hard scratch-resistant coating comes in glistening, jewel-tone colors—handsomely lacquered or lithographed to suit your exact requirements. Exclusive, patented thread spins cap on easily, forms a perfect-fitting seal. Send for full information and samples today . . . no obligation. Simply state your color preference and sizes needed for your products.

CROWN *MeritSEAL*—

CROWN CORK SPECIALTY CORP.

Division of Crown Cork and Seal Co., St. Louis 15, Mo.

Main Office: St. Louis, Mo. • Chicago: 401 Ontario St. • New York: 60 East Forty-Second St.
Western Representative: Western Crown Cork & Seal Corp., San Francisco . . . Los Angeles

Packaging and Selling

The Cosmetic Code

Cosmetic retailers are showing a great deal of frustration, bewilderment and irritation over the way the cosmetic code and its interpretation by manufacturers is working out. These human emotions are being caused by the delay of some manufacturers in telling retailers just what plan they are going to use under this code and by the fact that almost every plan which comes to their office is different from all others in some respect and in a few cases radically different from all others.

The department store seems to be bearing the brunt of this initial phase of industry confusion under the new cosmetic code. This is true because a considerable number of manufacturers are basing their whole plan, with its discounts, allowances and so forth on the measures they take for arriving at proportionately equal terms, by the way in which they can adjust their operation to their primary customer, that is, the department store.

There are still many things which are not clear to the manufacturer and there are very many problems involved in developing a workable plan and in finding a basis for equitable adjustment between several totally different classes of customers, for instance, department stores, chains, drug stores, variety stores, etc.

For this reason there has been a very strong tendency on the part of many leading retailers to do nothing at all about the cosmetic code and to leave suspended in the air the carefully worked out plans of many manufacturers who are hardworking and conscientious in getting this code developed and published. This not only creates a very uncomfortable position for these manufacturers but as some of them feel, a possibly dangerous one.

What a great many retailers do not realize or at least have decided to temporarily ignore, is that the Robinson-Patman Act, from which the Cosmetic Code is based, legally concerns the buyer just as much as the seller. For instance, this Act states that "It shall be unlawful for any person engaged in commerce, in the course of such commerce, knowingly to induce or receive a discrimination in price which is prohibited by this section."

Here are decisive changes in relations between buyers and sellers brought about by the Cosmetic Code:

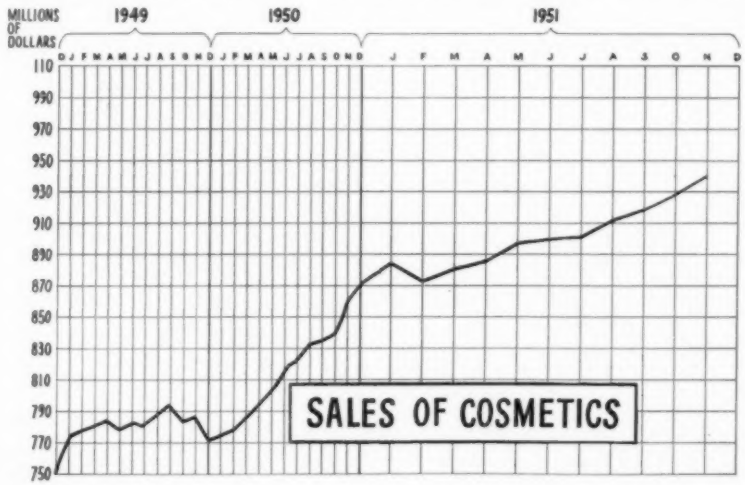
(a) Demonstrator Services—under the old arrangements, demonstrators were paid by manufacturers on a weekly basis with extremely varying costs for demonstrations in various stores. This is no longer possible as the payment of demonstrators now must be on a percentage basis based on the volume of sales.

(b) Advertising—the old advertising arrangements were largely informal and the manufacturer paid for the advertising on some such basis as 50-50 or 100 per cent without any exact reference to sales. Under the Code, advertising allowances must, percentagewise, be the same for all customers and can not be arbitrarily granted.

(c) P. M.'s-P. M. arrangements formerly were rather informal and unsystematic. It is clear that under the Code the same amount of P. M.'s must be paid by the manufacturer to all competing customers or to the personnel of competing customers.

The Federal Trade Commission has consistently disallowed extra allowances for prestige accounts. Because of these changes in the way the trade has traditionally operated with different stores and with different classes of stores, it is clear just what problems the manufacturer has faced in writing his new plan to operate under the Cosmetic Code. Under this Code any allowances, advertising, demonstrator, P. M. or any other advertising or sales help given to a department store must be made available to all retail customers regardless of the amount of their purchase but on proportionately equal terms. Where this is not possible an equivalent equal to the allowance must be given to each customer.

Retail sales of cosmetics for the twelve months ended with November 1951 totaled $940,313,000. This compares with $928,207,000 for the twelve months ended with October 1951 and with $859,486,000 for the twelve months ended with November 1950.



Productive Distribution

Many manufacturers of consumer products are wasting "both time and money" by relying on mass distribution. According to M. R. Wilson, General Sales Manager of Thor Corp. many companies could achieve better results by being "Highly selective" and by concentrating on the dealer who sells rather than stocks their products.

The Thor Company has eliminated almost 75 per cent of dealers on its books during the past two years. At the end of 1949 according to Mr. Wilson, Thor had

We can supply fine quality handmade glass containers made to private mold specifications or in a stock design such as the one illustrated. They can be furnished plain or with fired-on ceramic labels.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

22,000 dealers; now it has only 6,000. He said this problem of selective distribution has brought the following results: "In 1949 the average Thor dealer gave the company 6 per cent of his business; in 1950 the selected Thor dealer gave the Chicago firm 25 per cent to 30 per cent of its volume and in 1951, Thor shares of the dealer volume rose to 45 per cent.

According to Mr. Wilson in mass distribution 80 per cent of the dealers merely stock rather than sell the manufacturer's products and contribute only 20 per cent to the manufacturer's total sales volume.

Mr. Wilson added "This leaves 20 per cent of the dealers doing 80 per cent of your business. Under selective distribution, you discard the dealers who are dealers in name only and concentrate all of your attention—sales help, sales training, advertising and promotion on the dealers who have proven that they are willing to work at their trade.

Integrated Merchandizing

Radio is jumping into the current clamor of national advertising media for local tie-up with stores. But radio has a new wrinkle. According to reports of current negotiations between CBS and the A & P, the radio company is willing to trade time on its network for display space which will be reserved for sponsors.

What is called "integrated merchandising" is taking some of the big media by storm and national advertisers can undoubtedly look forward to a succession of wrinkles proposed by radio, television, the big national magazines and integrated groups of media such as newspapers all tied in with wholesalers or integrated groups of retailers.

During the last several years six new women's magazines have made their dynamic appearance in the supermarket or tied into an intimate distribution through food chains. This direct tie-in with an important branch of the retail trade, brought an immediate response from many large national advertisers, and showed up a very definite merchandising, not advertising, weakness in the leading service magazines.

To McKesson and Robbins should probably go the credit for the first national advertising cooperative campaign in a national magazine and for the invention of integrated merchandising between the wholesaler, the retailer, the manufacturer and the publications, bringing to bear all the combined power and selling ability of these various forces.

This is too dynamic a scoop and too much in tune with the trend to greater emphasis for in-store merchandising for other big factors in marketing to ignore.

If we felt like prophesying we would hazard the guess that we are headed for a mighty scramble among the big national forces in advertising media and the big integrated national forces in distribution for a marriage that would smack the consumer at a time of faltering buying, in a bigger and a better way.

Premiums

A study just made by National Family Opinion, Inc. indicates that 25 per cent of American families receive premiums. Of all the families receiving premiums 41.4 per cent lived in rural areas as compared to 39 per cent of the population living here.

While two-thirds of those receiving premiums were homemakers, children under ten formed the next largest group, i.e. 21.4 per cent.

Out of over 100 typical premiums reported only three came from this industry, i.e. perfume, lipstick and fingernail cleaner.

Aint What They Uster Be

Quite a few consumer goods industries lately have been trying to figure out what's been happening to the consumer's dollar. For the last few years many people in the cosmetic business have been blaming the purchase of new homes, furnishing these homes, automobiles and television as the products which have been mopping up an undue share of the dollar after taxes and leaving not quite so much for the other sellers of consumer goods.

The men's apparel industry has been included among these partly forgotten businessmen. According to one leader, who recently addressed their annual convention, "The American standard of living has gone up in everything but men's clothes." He also added that his industry is now receiving 20 per cent less of the consumer's dollar than they did 20 years ago.

According to an economist who addressed this large meeting, retail sales of men's clothing and furnishings were 1.6 per cent of disposable personal income in 1929. By 1946-48, even though so many men were returning from the armed services, the share was reduced to 1.4 per cent. Toward the end of 1951 this industry secured only 1 per cent of the consumer's disposable income.

According to this economist something's been happening to disposable income. Since 1946 the portion of the consumer's disposable dollar left after "first liens have been taken care of" has declined from 31 cents to 21 cents.

However, this meeting gave plenty of evidence that the retailers were much more conscious of changing consumer buying habits than they were of economics. The American man is becoming much less casual in his clothes. As one evidence cited, the young man on the campus was once the best styled customer; he then turned to casual clothes and, according to an industry member, "today it can not even be called casual—it's undressed."

Makers of men's hats could have told these apparel people a much sadder story of consumer buying habits. In fact, almost any consumer goods industry can contribute some thoughts to this subject. It's a good sign to see this subject come out in the open in industry wide discussions because that brings the particular industry so much nearer the solution of finding out what to make and sell that the customer wants and will buy.

Detail Sales

Professional Detail Associates is an organization only one year old that has been paving the way in a new operation in distribution.

This company was organized to give the small pharmaceutical manufacturer who could not afford to maintain a detail staff a service to physicians and prescription pharmacies, with competent detailing.

According to this company it takes from eight to ten months to show sales results in detailing. Physicians do not usually start writing prescriptions for detailed products until some 90 days after they discuss the item with a representative.

House to House

The $7 billion dollar business in direct selling has a vigorous supporter in the Association of Better Business Bureaus. In a bulletin called "The Right of Free Men to Engage in Legitimate Business" the whole situation created by the so-called Green River Ordinance and similar laws which restrict door-to-door selling is discussed.

The Bureau points out in this bulletin that "There is a minority of fraudulent direct sellers just as there is a minority of dishonest retailers and mail order

NEW!
YOUR
SOLID COLOGNE
IN A
PROPEL-REPEL
CONTAINER*
calumet
Swivelpak®
Solid Cologne Dispenser
A genuine revelation in solid cologne packaging.
NO MUSS NO FUSS
• Exclusive Air-tight Urea case.
• Purse size: capacity ½ oz.
ECONOMICAL
• No molding required.
• Material can be poured directly into container.
• Eliminates foil wrapping.
CALUMET Manufacturing Co., Inc.
565 Fifth Avenue, New York 17, N. Y.
MUrray Hill 8-4270
*PAT. PEND.

firms. As is true of American business as a whole that minority is very small. Out of 111,144 complaints received by the nation's Better Business Bureaus during the first six months of 1951 only 1½ per cent involved direct selling generally."

The Bureau states that there are about 7,000 firms of all sizes engaged in direct selling. These firms employ more than 1 million workers in factories producing products which are brought to householders by more than 1,500,000 salesmen and women, most of whom live in the communities where they work.

The Over Sixty Market

According to Government experts, that part of the population which includes men and women of 65 years and older will increase in the next decade very much faster than the percentage of increase of the entire population.

Today some twelve million Americans, or one out of every 13 are 65 or older. A decade ago the proportion was one out of 15.

Various experts in this field are already prophesying a vast variety of specialized products and services which these older people will require and will warrant market-wise. The pharmaceutical industry is doing a great deal of research in this field, and with some companies, the recognition of this market has become of paramount importance. In the cosmetic industry, except for the development of hormone creams, this market has not received the attention it deserves.

Chlorophyll

It seems as if everybody wants to get on the chlorophyll band wagon. In rapid succession the deodorants, tooth paste, dog food and other products in our trade are appearing on the market with the convincing chlorophyll story.

Now the Whitehall Pharmacal Division of American Home Products is testing Bi-So-Dol chlorophyll mints, an upset stomach product, "that stops bad breath."

Also at this time we understand the Sterling Tobacco Corp. is distributing its new Fairfax cigarettes which contain chlorophyll and which are claimed to clear up sore throats. Next in line we also understand is a chlorophyll shampoo which removes the odor of permanent wave fluids from the hair. This new product, Clo, will be advertised largely on its odor removing properties and will be marketed by Bymart-Tintair.

Unique Squeezable Bottles

Two new Plax-Pak Polyethylene bottles are now being marketed by APSCO, Inc., Garfield, New Jersey which have unique and intriguing features.

The first one named Measure-Well is a Plax bottle which measures an accurate teaspoon. Fingertip pressure on the bottle fills a well or reservoir inserted in the neck. This well may be

removed for refilling the bottle. The Measure-Well makes possible precise dispensing of many kinds of liquid products, with no need to touch or come in contact with the product.

Med-Aid is a squeezable Plastic Plax bottle which has been adapted as a refillable atomizer, dropper or dispenser. This is called the Med-Aid 3-Way Atomizer which can be held upright and squeezed to function as an atomizer or tilted downward and pressed gently to be used as a dropper. The package is refilled by simply unscrewing the cap.

Underestimating Men

It looks as if people in marketing have been greatly underestimating the influence of the man in recent years. Some very interesting studies in food stores have been showing not only that a high percentage of the customers are men but that men purchase in larger quantities, tend to select higher priced items and are much more susceptible to impulse buying.

Now the A & P, evidently sensing this situation, is testing in New England full page advertising in 200 dailies and weeklies food copy directed specifically to men.

It seems to us that we recall lately a survey by Retail Drug Association which indicated a much higher percentage of men shoppers in drug stores than surveys have showed in food stores.

Breck Advertising

When John H. Breck, Inc. of Sprinfield stepped out of the beauty parlors, where the company had a very firm and secure position, they made use of women's magazine with a style of advertising that has increasingly intrigued the profession and brought about more discussion than probably any other current advertising running today. At least that is true of the advertising of this industry.

The characteristic Breck advertising was developed by a local artist, Charles Sheldon, who had already acquired a considerable reputation in painting beautiful girls in a style that is all his own.

These paintings were pastels and gave the impression of a somewhat pale and languid color tone. However, there was no mistaking the visualization of a headline which Breck has since made famous, i.e., "Beautiful Hair".

In this advertising the picture of the girl occupies most of the space and to a large extent copy has been held to a terse minimum. In a talk before a Boston advertising club recently, Edward Breck remarked that the advertising has had two effects, i.e., it pulled a steady stream of complaints from ad men, and it resulted in steadily increasing consumer sales. In fact, in less than seven years Breck Shampoo has had a 500 per cent volume increase.

Sellers Beware

A survey made by a large printer of catalogues shows that there will be a substantial increase in the use of Christmas catalogues by department stores this year. This printer expects the biggest boom in retail catalogues since 1940. The reason for this, acording to department store executives, is that more women are employed and have less time to shop.

Not Fur Use

The fur industry has just been handed a going over by the Federal Trade Commission which contains a certain amount of interest for some parts of this industry. From now on the fur people have a published guide which tells them exactly what to call their furs. Only 100 hair, fleece and fur bearing animals and only the accepted English names or

the names by which these animals are commonly called, are listed. Hereafter, in a fur coat a rabbit is a rabbit and a squirrel is a squirrel.

Air for Essential Oils

Essential oils are being economically shipped to this country from Guatemala by air freight. The essential oil control office in that city states that almost all of the oils exported, i.e., largely citronella and lemongrass, are flown to this country in a matter of four to five days in place of more than a month when shipped by boat.

Cosmetic Distribution

Manufacturers of cosmetics, and particularly those products usually classified as toiletries, are faced with a continually changing pattern in distribution. This is not just the phenomena that has happened in the supermarket over the last several years but is a broad mixture of perplexing changes in consumer preferences as to where to buy these products.

Almost every magazine survey that comes to this office, where the place of purchase is indicated over a period of years shows that definite changes are taking place. Very often these surveys show conflicting trends which makes a study of these changes all the more perplexing.

Just recently the Fawcett magazines have issued a survey which gives the place of purchase in each year from 1941 to 1951 for cosmetics. Below is the place of purchase comparison in this survey between 1941 and 1951.

Place of Purchase

	1941	*1951*
Drug Store	32%	50%
Department store	29%	34%
5 & 10c Stores	40%	20%
Others	10%	23%

Wheaton's New Administration Bldg.

T. C. Wheaton Company and the Wheaton Glass Company are now occupying their new administration and laboratory building at Millville, N. J. This completely modern structure marks the culmination of an expansion program instituted in 1937.

Offices of executives and administration employees, laboratories in many fields of research, and a large lobby comprise the first floor. On the second floor is a large auditorium, a lobby, and accommodations for guests. Many of the company's customers visit the Wheaton plant. They will be entertained in special quarters provided for them. These include bedrooms, a dining room, and a lounge. There is a kitchen for preparation of guests' meals.

OUR MARCH AD for HEALTH and BEAUTY AIDS

Roger Bell, operator of the Journal's mythical group of food markets, has introduced the new section with a discussion, What About Tomorrow, which has been sent, along with the Roger Bell Plan, to 4,172 grocery headquarters offices where there is either direct ownership of retail food stores or substantial influence covering the products stocked and merchandised and advertised in over 225,000 stores.

Merchandising Non-Food Items

Beginning with the March issue, The Bellringer, the monthly publication of the Ladies Home Journal for retail grocery operators, will devote an entire section to methods of merchandising, servicing, and advertising non-food items. In recognition of the retail grocery trend toward special departments for health and grocery aids, the Journal is said to be the first consumer publication to offer such merchandising aid to drug manufacturers and food stores.

An imaginary special service man for the Roger Bell Markets has been established in the person of Jack Trail, son of a druggist. In the drug section Roger Bell offers such sound advice as, "Watch the retail prices. We do not want to undersell the drug stores. We can't afford to add departments that cannot stand, eventually, on their feet. Watch your copy in the ads. Talk convenience rather than price. Be sure to crayon the price very clear on the *top* of all drug items including any tax we might have to collect on this or that product."

Included is the proof of a full-page newspaper ad to guide operators in advertising drug items.

Portrait of Beauty

Introduction of Studio Girl Creme Shampoo in Sheffield Process collapsible tubes met instant acceptance – proving once again that to foster the image of ideal beauty held in the hearts of American women is a potent key to sales success.

A modern and genuine beauty aid... an inspired name... and collapsible tubes that are tops in convenience, safety and efficiency – that's a combination engineered to better promote the sales potential of *your* product.

An exclusive Sheffield Process makes it possible to package this shampoo in lightweight aluminum tubes. For details, call or write your nearest Sheffield representative.

The Sheffield Tube Corporation

Home Offices: New London, Connecticut
Sales Offices: New York • Chicago • Los Angeles

the SEARCH for *Beauty*

Beauty contests are competitive,

and so are beauty products.

Where do your products stand in the

daily parade on cosmetic shelves?

Are they handsomely and properly dressed?

Does their external beauty suggest

the beauty preparation within?

Are they dressing-table conscious?

You get all the right answers when you

use handsome, efficient H-A Cosmeticware.

HAZEL-ATLAS GLASS CO.

Wheeling, West Virginia

Custom Protection for cosmetics—

the touch of elegance that adds glamorous new sales appeal

Imagine a packaging material that's soft, white, sparkling clean—that enhances the beauty of your product while giving real protection, too! You'll find these advantages in Kimberly-Clark Interior Packaging—KIMPAK*... the amazingly versatile cellulose wadding that provides *custom protection* for any kind of cosmetics.

As this smartly designed Max Factor package shows, KIMPAK does more than guard against shock, vibration and surface damage. It adds a distinctive touch of grace and beauty—in a way no other packaging material can equal. And since KIMPAK is available in rolls, sheets or pads of many thicknesses, it can be tailored to fit any packaging need.

Regardless of whether you package perfume, soap, lotion, face powder or lipstick, you'll find KIMPAK is the smart, modern way to give your product protection with *sales appeal.*

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark** CORPORATION, NEENAH, WISCONSIN

*T. M. REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

RICHFORD

Creators of

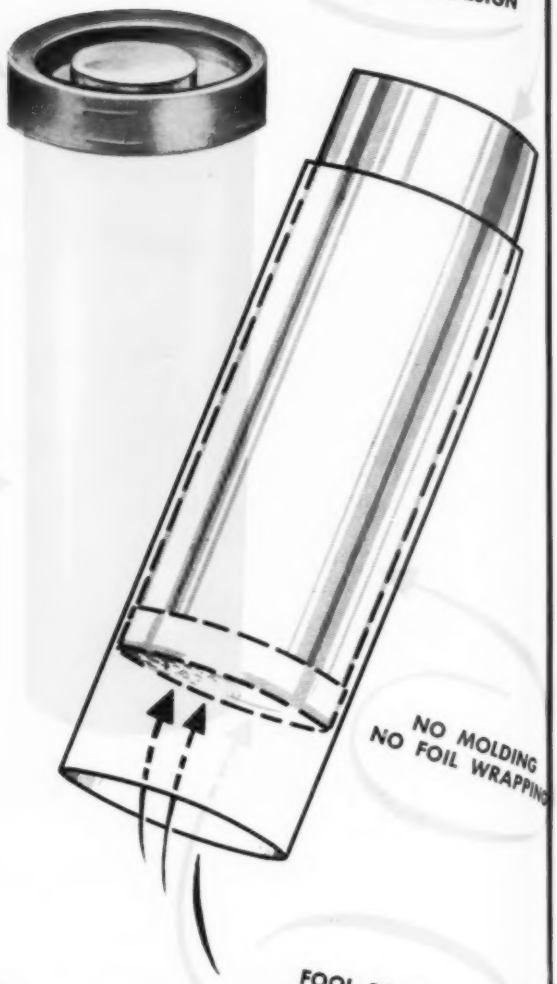
SPILLPROOF TOUCH-N-FLO

PERFUME FLACONS PURSE DISPENSERS

Presents

RICHFORD PUSH UP

GOLDEN METAL
PURSE STICK CONTAINER



PUSH UP is another Richford-engineered container — designed for beauty, practicality, and economy.

Made in 2 purse sizes.

PERFECT FOR

STICK COLOGNE
SOLID HAND CREAM
AFTER-SHAVE STICK
DE-ODORANT STICK

Write for samples & prices

*Trade Mark

RICHFORD CORPORATION

251 FOURTH AVENUE • NEW YORK 10, N. Y.

Doings

Smith, Kline & French Laboratories' Quotane Lotion, used for itching and burning, is a potent local anesthetic, in the form of an amino ether derivative of isoquinoline, also containing camphor, menthol, and zinc oxide.

Parke, Davis & Co., Ltd. is producing a new custard-flavored form of Chloromycetin, called Pediatric Chloromycetin Palmitate. It is especially for children too young to swallow the drug in capsules.

Seaforth is this month introducing on a national scale Seaforth Shave Lotion in a flask bottle retailing at 59c and Seaforth's new 50c Presto-Lather Shave Cream. Seaforth Veladron Brushless Shave is appearing in a new package.

Harriet Hubbard Ayer has come up with a second mint-flavored lipstick, "Mint Red."

Geigy's Eurax antipruritic cream has been removed from the list of drugs required to carry the prescription legend and may be dispensed at the pharmacist's discretion.

McNeil Laboratories is marketing Syrup Sustinex, a high-potency vitamin B complex in a cola flavored syrup.

Dodge & Olcott has added a new butterscotch flavor to the Dolco 5200 Flavor Line, Dolco Butterscotch No. 5215.

Winthrop-Stearns has introduced an improved topical bactericide for use in the treatment of ear, nose and throat infections. The preparation, Sulfamylon Viscous Solution, combines 5 per cent Sulfamylon hydrochloride and 1 per cent methylcellulose.

Sharp & Dohme has released Lyovac Plasma (Ophthalmic), irradiated normal human plasma, which acts as a physiologic suture in eye surgery and skin grafting in combination with thrombin solution.

Bymart-Tintair's newest product is Clo, a shampoo containing chlorophyll. It is made in three types, for dry, oily and normal hair.

Lancome Sales Inc. will feature Magie, its newest perfume, in promotional plans for 1952.

Upjohn has announced four new products: Thera-Zymacap Soft Elastic Capsules which contain all the major vitamins in therapeutic amounts; Zymalixir, Upjohn's Zymatinic Drops formula which has been extended to make it suitable for teaspoon administration to adults and children suffering from nutritional anemia; E C P, a sterile, oil solution of alpha-estradiol, the most active of the known estrogens, for use in veterinary medicine; and Cyclogesterin Compressed Tablets, containing estrogenic substances and progesterone for the treatment of secondary amenorrhea and functional uterine bleeding.

Chilcott Laboratories is marketing Peritrate, a new, long-lasting coronary vasodilator for the prophylactic treatment of angina pectoris.

Abbott has prepared Bacillets (Penicillin-Bacitracin Troches, Abbott), each one containing 20,000 units of Penicillin G Potassium and 50 units of bacitracin in a lime-flavored, hard-candy base. They are used to combat most organisms encountered in infections of the oral cavity.

Rand Pharmaceutical Co. has released Nabocal Tablets, a complete vitamin-supplement for pre-natal care. Each tablet contains natural bone meal powder plus other essential minerals and vitamins.

Wyeth has developed Tribiotic Ointment combining crystalline potassium penicillin G, dihydrostreptomycin sulfate and bacitracin to provide the combined action of three antibiotics in a single treatment for the prevention and local treatment of mastitis in animals.

Helena Rubinstein will distribute Contour Lift Film the end of this month, a new activating lotion said to overcome all marks of aging in the face and neck. It can be used on either dry or oily skin.

Bauer & Black is planning a new premium promotion next month featuring their "Miss Curity" dolls. They will be introduced over the nationwide TV hook-up of Howdy Doody and in the comic pages of 108 Sunday newspapers.

Helene Pessl, Inc. has added Stick Cologne to the Little Lady Toiletries collection; it will be featured as half of the new Little Lady package, called "Little Lady Twosome."

Winthrop-Stearns has introduced Pi-Panol hydrochloride, a potent antispasmodic for use in the treatment of Parkinson's disease.

The Wm. S. Merrell Co. has a new hypotensive product, Nitranitol P. V., which provides, with dual action, better control of hypertensive patients. It is particularly valuable in threshold case of hypertensive crisis.

5-Day Laboratories plans to launch a "5-Day wonder" combination (5-Day and Kreml Shampoo) in one luxurious eye-catching box, at a saving of 25c to the consumer. The campaign, which offers a regular 59c 5-Day Deodorant package and a 25c bottle of Kreml Shampoo in one package at 59c, will reach detail outlets starting April 24.

Pharma-Craft's Heed Spray Deodorant is now available in a new, improved formula and a new nonbreakable, dressing-table container that is equally handy for travelling.

Dermetics has introduced a new lipstick shade called Cherry Pie Pink.

Charles Antell is distributing nationally a specially priced combination package of Charles Antell Formula No. 9 and Shampoo, featuring new bottle design and carton.

SPRA-TAINER Does It Again!

Perfect Coiffure Control Instantly— at the Flick of A Finger

√ To control waves and curls.
√ To add highlights and sheen to hair.
√ To keep hair in place and give body to hair.

LIQUINET is self-spraying from SPRA-TAINER . . . *FIRST* among all lightweight, low-cost propulsion cans:

First to be invented; *First* on the market; *First* in sales; *First* in favor with manufacturers of propulsion products because of exclusive No Side Seam, No Top Seam construction. Three companion sizes supplied: 12 oz. Large, 6 oz. Squat, 6 oz. Tall — each enhanced by Crown Lithography.

Whenever you need fine Cans for any use, consult Crown's Complete Line. As exemplified by SPRA-TAINER, Crown Cans are your surest guide to Progressive Packaging. You Can't Buy Better Cans!

CROWN CAN
Division of
CROWN CORK & SEAL COMPANY

One of America's Largest Can Manufacturers • Plants at Philadelphia, Chicago, Orlando • Branch Offices: New York, Baltimore, Pittsburgh, St. Louis

The Finest Packaging in the World

at LESS COST

Factory No. 1

Receiving Room

Package Control Laboratory

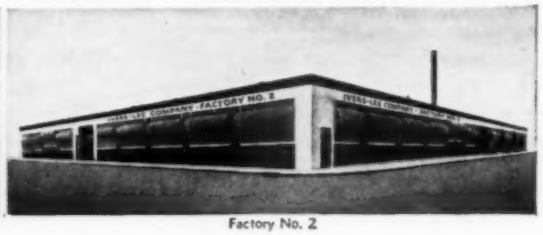
Special Air-Conditioned Room

Powder Packaging Room

Sample Packaging

Package Assembly

Shipping Room



Factory No. 2

Unequalled Facilities give you *Speed and Economy*

Our Only Business Is Unit Packaging — our 32 years of concentrated effort enable us to make available to you — The fastest unit-packaging machines in the world — Hundreds of different high-speed machines for an endless variety of packages — Motor-driven, conveyor production — Automatic carton-making machines — Motor-skid transport — Straight-line, continuous packaging in two superb buildings, totaling 125,000 square feet, with a capacity of 13,000,000 units daily.

You send us your product in bulk — we do the rest. Without investing a single cent in capital equipment you have The Finest Packaging In The World — At Less Cost.

Creators of a thousand and one different types of Unit Packages for tablets, capsules, triturates, powders, creams and unusual products, during thirty-two years of Packaging Service.

NATIONAL PACKAGING EXPOSITION

APRIL 1st - 4th

We'll be glad to greet you at our booth

UNIT IL PACKAGING

IVERS LEE CO.

215 CENTRAL AVENUE NEWARK, NEW JERSEY

Fifth "Freon" CUSTOMER DEMAND for

Market for aerosol products rapidly increasing

The number of aerosol users has more than doubled in the last 4 years! The nationwide 1951 Du Pont aerosol market survey shows that 57% of consumers interviewed used aerosol products. This is an increase of 111% over 1947, when only 27% of consumers bought aerosols.

More *new* customers bought aerosols last year than in any year since the surveys began. About 1 user in every 6 was a new customer . . . someone who bought an aerosol product for the first time in 1951.

But the survey also shows that there is still a large, untapped market for aerosol products of all kinds. This market exists at all economic levels and in every region of the country, both urban and rural.

Customers like aerosols . . . come back for more!

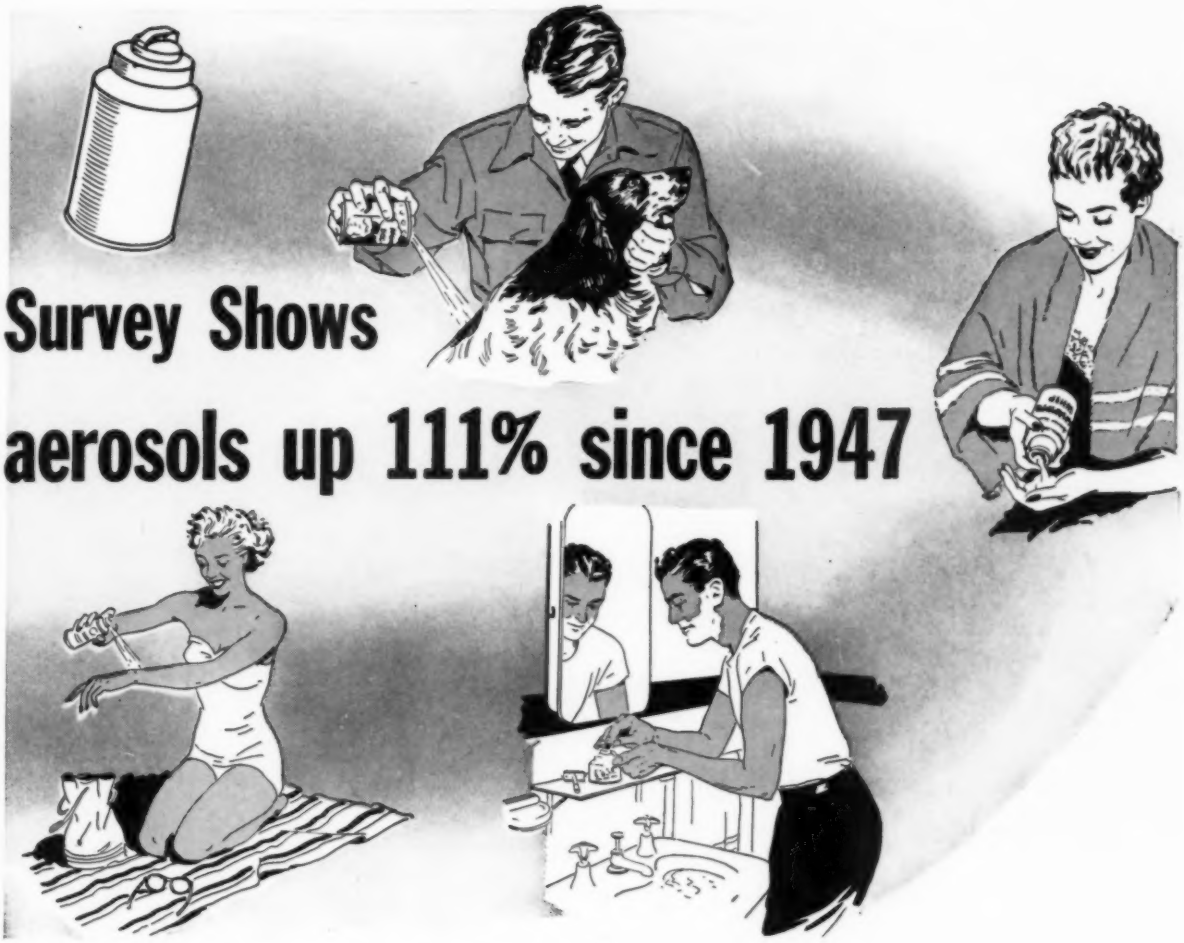
The great majority of consumers (97%) reported that they were satisfied with the aerosol products they had tried. Customers like aerosols because they find them more convenient, easy to use, more effective and quick acting. The study shows that there is a steady resale market for aerosols as well as a sharp upward trend of new users.

Insecticides best sellers . . . other products gain.

Insecticides still top the list of aerosols used . . . with room deodorants, paints and mothproofing preparations making strong gains. The newer aerosol products—personal deodorants, shave creams, shampoos, sun-tan preparations and many others—are also rapidly gaining popularity. The majority of users reported that they would continue to buy and use them.

DU PONT
REG. U. S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

"FREON" SAFE



Survey Shows aerosols up 111% since 1947

Customers assured of safety with "Freon" propellents. When a customer considers buying an aerosol, the question of safety is often in his mind. Many dealers have found it helps their sales to stress the safety factors of "Freon" propellents, used in most aerosols. These propellents are nonflammable, nonexplosive, virtually nontoxic . . . harmless to fabrics, furs and finishes.

FREE! Copy of the new "Freon" survey.

This digest copy of the 1951 survey of the aerosol market is yours for the asking. Covers dealer distribution practices, consumer buying habits . . . including for the first time a study among rural residents. Because the steadily increasing number of aerosol products falls into two main groups, household and personal products, the new survey has been extended to give you market data for both types. Write today for your copy of "The Aerosol Market," E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

"Freon" propellents meet every aerosol need

21 different "Freon" propellents supplied during 1951 show versatility of these products. For example, four different propellents were supplied for insecticides, three different ones for foam products, three different ones for room deodorants . . . all told, twenty-one different propellents were supplied to aerosol manufacturers during 1951. This is a good example of "Freon" versatility, a property of growing importance in view of the steadily increasing variety of aerosol products.

This means that a "Freon" propellent can be tailored to give just the right particle size, pressure, solubility or other properties to meet any need. So . . . whenever you have any propellent problems . . . be sure to investigate "Freon" propellents. Complete information on their use will be sent on request.

PROPELLENTS

KINETIC
REG. U. S. PAT. OFF.

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

SALES OFFICES

KANSAS CITY
DETROIT
CHICAGO
CLEVELAND
MILWAUKEE
CINCINNATI
LOUISVILLE
ST. LOUIS
INDIANAPOLIS
ST. PAUL
NEW YORK
MEMPHIS
HAVANA, CUBA

FOSTER·FORBES

Cosmetic Bottles

FOSTER-FORBES GLASS COMPANY, MARION, INDIANA, U.S.A.

News...

Silloway, V.P., Warner-Hudnut

Charles T. Silloway has been elected vice-president of Warner-Hudnut, Inc. and will be responsible for the sales and promotion of the William R. Warner ethical pharmaceutical division. He will also serve on the research committee. He will simultaneously continue as executive vice-president of Chilcott Laboratories which now operates as an independent subsidiary of Warner-Hudnut.

CHARLES T. SILLOWAY

Heyden Producing Neomycin

Heyden Chemical Corp.'s antibiotic division is now producing neomycin in commercial quantities, according to John P. Remensnyder, president. It will be offered in bulk to ethical pharmaceutical manufacturers in this country and marketed under the Heyden label for export.

The company has assembled an abstract bibliography of more than 150 articles published on Neomycin covering the years 1949, 1950, and 1951. Also included is a chart outlining the antimicrobial activity of the antibiotic, designed to provide a convenient reference guide. The booklet may be obtained by writing the company at 393 Seventh Ave., New York.

Addresses Soap & Extract Ass'n

Edward McFaul, active in the fields of teaching, personnel management and selling for the past twenty years, was the guest speaker at the February 12 meeting of the Chicago Perfumer, Soap and Extract Association at the Conrad Hilton Hotel. He talked on, "How Confused Can You Get?"

Baker with Armour Labs.

William B. Baker has been appointed director of product development of the Armour Laboratories and will have charge of the technical development of pharmaceutical products.

Spitaleri Talks on Perfume

F. Spitaleri, perfumer, Polak's Frutal Works, Inc., delivered a talk over WKIP on the advancement of the perfume industry through Chemistry on January 28. Sponsored by the Mid-Hudson Section of the American Chemical Society, his discussion dealt with the history of perfumes, and the advancements made by the chemists so that perfumes today are available to every one through chemistry.

F. SPITALERI

Lines Heads CSC Animal Nutrition

George O. Lines has become general manager of the newly created animal nutrition division of Commercial Solvents Corp., according to H. J. Henry, vice-president of the product division. He will operate from the company's general offices, 17 East 42nd St., New York. The animal nutrition products had formerly been handled by the company's agricultural chemicals division under the heading of Feed Supplements.

Mr. Lines has been succeeded as manager of the company's Peoria, Ill., plant by M. Thomas Walton, formerly plant superintendent

ADMA Spring Meeting

The spring meeting of the production and engineering section of the American Drug Manufacturers Association will be held on Thursday and Friday, May 15 and 16 at the Homestead in Hot Springs, Va. It will be devoted to an intensive discussion of technical and operating problems, with particular emphasis on new developments, and the accounting function in relation to production and engineering areas.

Zeissig Joins Merck Vet. Staff

Dr. Alexander Zeissig, former veterinary consultant to the New York State Health Department, has joined the staff of Merck & Co., Inc., as director of the veterinary research department. His appointment is in line with the company's increased interest in the field of animal nutrition and animal medicinal products.

Wargell Promoted by Strong Cobb

Walter F. Wargell, formerly director of the professional products division of Strong Cobb & Co., Inc., has been promoted to the position of assistant to the president, according to George Miller, president.

WALTER F. WARGELL

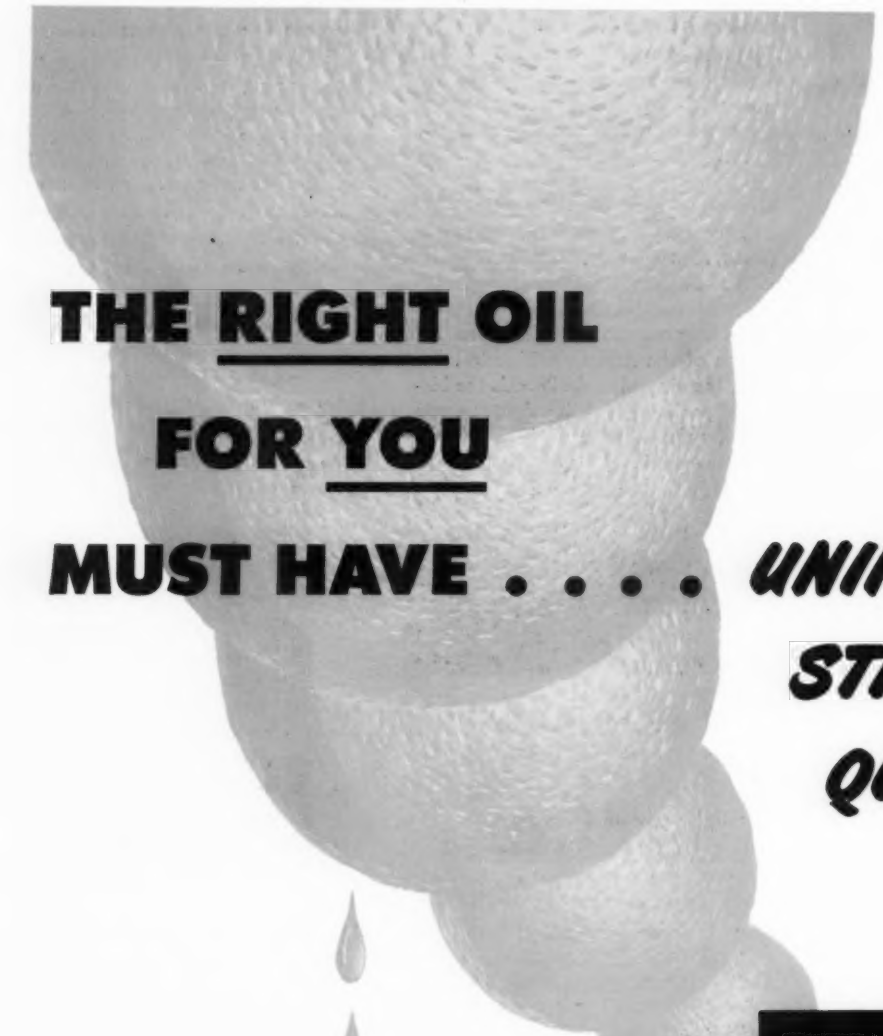
Allied Drug Expansion Plan

In line with its recent expansion program, Allied Drug Co. has moved into its new home at 442 N. Wells St., Chicago, which gives the firm more space and provides it with a central location for both local and out-of-town customers.

Frank Diamond is now director of advertising and sales promotion, according to Robert J. Zall, vice-president, Timothy J. Flynn has been appointed plant manager, and Stephen Mosny, director of purchasing.

Speak at APMA Meeting

Arthur F. Gormley, vice-president in charge of sales and advertising, Schenley Laboratories, Inc., and James H. Noyes, vice-president in charge of production, led a round-table discussion group on "Sterile Techniques" before the central production section of the American Pharmaceutical Manufacturers Association section meeting in Chicago on February 5 and 6. Approximately 100 delegates from pharmaceutical manufacturing firms in the Midwest area attended the two-day meeting at the Edgewater Beach Hotel.



THE RIGHT OIL FOR YOU MUST HAVE . . . .

UNIFORMITY
STRENGTH
QUALITY

Thousands of buyers know that Exchange Oil of Orange meets these qualifications consistently. They know that rigid, day-to-day laboratory control, combined with years of experience as the leader in the citrus products field, guarantees that Exchange Oil of Orange will always meet their most critical specifications.

Distributed in the United States exclusively by

DODGE & OLCOTT, INC.
180 Varick Street, New York 14, N. Y.

•

FRITZSCHE BROTHERS, INC.
76 Ninth Avenue, New York 11, N. Y.

Exchange

OIL OF
ORANGE
U.S.P.

CALIFORNIA FRUIT GROWERS EXCHANGE
PRODUCTS DEPARTMENT, ONTARIO, CALIF.
PRODUCING PLANT:
The Exchange Orange Products Co., Ontario, Calif.

Gair Buys Amer. Coating Mills

George E. Dyke, president, Robert Gair Co., Inc., and J. P. Levis, chairman of the board, Owens-Illinois Glass Co., have announced the sale of the manufacturing plants, business and inventories by Owens-Illinois of its American Coating Mills division to Gair effective April 1.

Under the transaction, Robert Gair Co. will acquire paperboard mills at Elkhart, Ind., and Middletown, Ohio, and carton fabricating plants at Elkhart, Chicago, and Grand Rapids. In exchange, Owens-Illinois will receive about 400,000 shares of common stock of Gair and a substantial cash consideration. Inventories will be purchased for cash.

The manufacturing operations of Owens-Illinois which are devoted to making corrugated boxes for the company's products will not be included in the transaction, according to Mr. Levis.

American Coating Mills will be operated as a separate division of Gair under the direction of R. L. Snideman, president, and his staff. American Coating Mills will continue to service its present customers and as a result of the transaction will have an additional source of all grades of paperboard, and will be able to offer its customers other products heretofore made exclusively by Gair. The additional plants acquired through this transaction will enable Gair to extend its line of products, and to increase service to customers located in the Middle West.

Dr. Stodden Joins Upjohn

Dr. Charlotte L. R. Stodden recently joined the medical division of the Upjohn Co., according to Dr. E. L. Burbidge, medical director. She has replaced Dr. Leo Dick, who resigned to enter private practice, in the products information department.

Moreau Wins Emery Contest

Philip C. Moreau, technical service representative, Corn Products Sales Co., won the recent contest sponsored by Emery Industries at the Chemical Industries Exposition in New York by naming the Emery ball-man trade-mark now being used. H. D. Armitage, Emery's New York district manager, presented Mr. Moreau with the prize, a leather suitcase.

H. D. Armitage, district mgr., Emery Industries, Inc., presenting two-suiter to Philip C. Moreau, Corn Prods. Sales Co., as winner of name contest. R. J. Roberts, of N. Y. sales staff, is standing in the background.

Schering Expands Field Staff

Fourteen new professional service representatives have completed their training and have joined the Schering staff, according to Dr. John N. McDonnell, vice-president. Ten of the new representatives were assigned to the domestic sales division and the others were assigned to the International division.

The intensive training course of five weeks covering scientific and technical fields, and also professional service, was under the direction of Herman Leitzow, Schering domestic sales manager, and George C. Straayer, professional service manager.

New S & D Plant in Philippines

The new $500,000 pharmaceutical manufacturing laboratories of Sharp & Dohme (Philippines) Inc. were officially opened recently in Manila at special ceremonies attended by prominent civic, government and business leaders and local members of the medical and allied professions.

Officials from the parent company on hand for the occasion included Dr. Paul S. Pittenger, vice-president; William B. Wimpenney, director of foreign operations, and Con M. Hewitt, export field operations manager. Albert R. Denmark, general manager of the Philippine subsidiary, was host at the opening. Mrs. Consuelo Perez, wife of the Speaker of the Philippines House of Representatives, cut a ribbon signifying the official opening of the plant, and was assisted by President Quirino who formally initiated production operations by throwing a switch.

The new plant is located at the corner of Isaac Peral and Antonio Correa Streets in Manila, and is a one-story reinforced concrete structure containing about 20,000 square feet of floor space. It includes facilities for the subsidiary's general offices and a modern conference room which will be available to medical and government groups for meeting purposes, as well as for the primary use of the company's personnel.

Contact Committee Meeting

The next meeting of the Combined Pharmaceutical Contact Committee will be held on Thursday and Friday, March 20 and 21 at the Hotel Washington, Washington, D. C. A general discussion will be held on the subject of Sterility Testing and Controls. A group luncheon is planned for the first day.

Officers and sales force at Magnus, Mabee and Reynard, Inc. dinner on January 12 ending the 21st annual sales conference.

New Perfection
DROPPING PARTS
Simplify Your Packaging Problem

#1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

#3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.

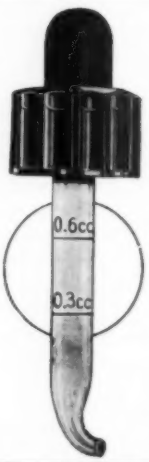
#4

Metal cap; oil-resistant Amekine synthetic rubber bulb (without strong odor); blunt glass.

The wide variety of sizes, styles and colors in New Perfection's complete line of dropping parts offers the answer to your packaging problem. Each component part is designed to present and administer your product in the most attractive, convenient manner. We supply dropping parts to fit your bottles or furnish the complete unit.

DROPPER GLASSES CAN BE CALIBRATED IN COLOR

An inexpensive extra that adds great convenience to the use of your preparation. The dosage you desire in the color you specify is accurately and permanently printed on the dropper glass. Trade-marks and firm names can also be imprinted.



#2

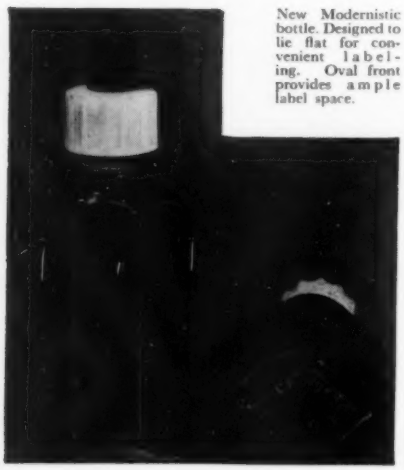
Non-rolling, extra-depth Bakelite cap; thick-flange rubber bulb; special bent glass, plain or CALIBRATED.

RUBBER BULBS are supplied in many styles and colors. Oil-resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS of plastic or metal can be furnished in a complete range of sizes and colors.

DROPPER GLASSES are available in a wide variety of styles and sizes; plain or CALIBRATED in any color to mark specific dosages.

BOTTLES in an attractive modernistic style in Amber, Blue, Green or Clear glass are available, with dropping parts, in the following sizes: 2 cc, ⅛, ¼, ½, 1 and 2 oz.



New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

Write for Samples and Quotations

PENNSYLVANIA
GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. CRAIG ST. • PITTSBURGH (13), PA., U.S.A.

Moon Promoted by Kremers

D. L. Moon, southeastern district sales manager, has been promoted to manager of governmental sales by Kremers-Urban Co.

D. L. MOON

15 Added to Wyeth Sales Staff

Fifteen men have joined the national sales staff of Wyeth Inc., according to Stuart V. Smith, vice-president, and include: Ozmin Figueroa, Los Angeles; David D. Budzko and Mahlon Moldovan, Detroit; Leonard C. Torres and Arnold Roossin, New York; Austin Strauss, Jamaica, L. I.; J. E. Morrison, Portland; Richard A. Rectenwald, Pittsburgh; Harry L. Snyder, Torrance, Calif.; Stanley Shapiro, Washington, D. C.; Charles H. Smith, Long Beach, Calif.; Donald A. Ash, Des Moines; Wallace G. Brazeau, Ottumwa, Iowa; Joseph S. King, Ogden, Utah; and Alfred G. Weeks, Cumberland, Maryland.

Max Factor Warehouse Burned

A Max Factor warehouse at 927 No. Sycamore Ave., Hollywood, burned for an hour and a half on February 4, in a spectacular two-alarm fire which destroyed an estimated $250,000 worth of materials in the large storage rooms. Although tons of finished face powder and thousands of containers for Pan-Stik and Pan-Cake Make-Up were lost, large enough supplies are stocked in other company warehouses, according to Max Factor, Jr., to take care of distribution needs.

McKay Retires from Vick

H. D. McKay, formerly an executive of the Vick Chemical Co., has become an independent management consultant servicing Vick, and Lehn & Fink Products Corp. He retired from Vick on February 1, after 36 years with the company, 22 of them as a director.

Goodrich with FSA

William W. Goodrich has been appointed assistant general counsel of the Federal Security Agency and chief of the food and drug division of the general counsel's office by Federal Security Administrator, Oscar R. Ewing. He succeeds Daniel P. Willis who has retired.

Dr. Calvin B. Spencer has become chief of the division of foreign quarantine of the Public Health Service, and Dr. Gilbert L. Dunnahoo has been appointed chief of the medical Programs, FSA region X, San Francisco. Dr. Dunnahoo was formerly chief of the division of foreign quarantine, and Dr. Spencer, chief quarantine officer for the port of New York.

Ibarguen in S & D Export Post

Albert E. Ibarguen, general manager of the Puerto Rican branch and the Caribbean area of Sharp & Dohme Inter-American Corp., has been appointed to the newly-created position of district manager export field operations, according to Con M. Hewitt, manager of export field operations of the parent company. He will handle all field operations in Puerto Rico, the Caribbean area (except Cuba), Argentina, Venezuela, Uruguay, Paraguay, and all Central American countries.

Miles Retires from Monsanto

Harry B. Miles retired from Monsanto Chemical Co. on March 1 as a member of the organic chemical division. He joined the company in 1923.

Abbott Appointments

I. D. Harvey, formerly district manager of Abbott Laboratories, with headquarters in Charlotte, N. C., was promoted to manager of the central division with headquarters in Chicago. He succeeds George Epstein, who asked to be relieved of the duties of divisional manager but will remain as Chicago Branch manager.

Richard E. Vaden, a salesman with headquarters in Wilmington, N. C., succeeds Mr. Harvey as district manager in Charlotte. William J. Murphy has been named district manager with headquarters in Buffalo, succeeding Tom Sangeorge, who died December 9, 1951.

Elmer M. Altmann has been made district manager with headquarters in Los Angeles, and is pinch-hitting for Ben L. Bear, Jr., who is recuperating from serious injuries sustained in an auto accident.

Hooker Appointments

Abram Davis has become a research chemist of Hooker Electrochemical Co. in the development and research department, and Beryl B. McKown, a technician in the physical laboratory.

Thomas Hooker, William F. Harvey, and Edward J. Kaleta have joined the Hooker engineering department.

Oleson Heads Employers Ass'n

Wrisley B. Oleson, president of Allen B. Wrisley Co., was elected president of the Employers Association of Chicago at its 50th anniversary meeting.

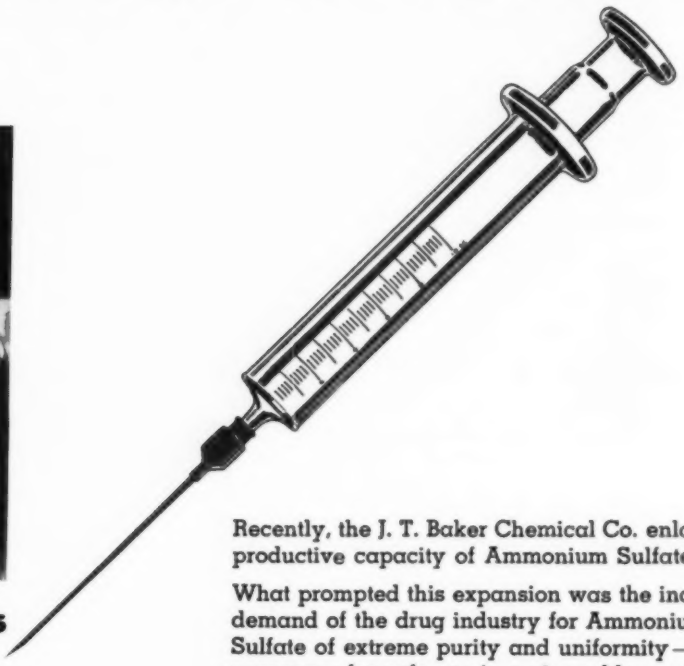
Sales meeting of Helene Curtis Retail div. held in Chicago in January. Standing, left to right: G. M. Factor, vice-president; Max Braun, treasurer; Gerald Gidwitz, president; W. Englehaupt, sales promotion manager; L. A. Sauers, sales manager; and Don Sack, executive assistant. At table, lower left, clockwise: J. Cameron, S. Hughes, D. Jordan, W. Rader, A. Harris, J. Victor, W. Scudder, W. Homiller, E. Drake, H. Lapin, E. Reich, F. Bomboy, M. Pixton, L. Ramsdale, W. Bailey, and R. Harding. They outlined 1952 plans.

For your production of

Serums...Antibiotics...Biologicals

call on Baker for high purity

AMMONIUM SULFATE



...for defense needs

...for civilian needs

Recently, the J. T. Baker Chemical Co. enlarged its productive capacity of Ammonium Sulfate, Purified.

What prompted this expansion was the increasing demand of the drug industry for Ammonium Sulfate of extreme purity and uniformity—so necessary for safe use in syringeable products.

Today, with the rise in national defense needs, the demand for this important chemical is even greater.

Purity and uniformity are Baker by-words. Baker Ammonium Sulfate, Purified, assays 99.5% minimum $(NH_4)_2SO_4$. It is low in heavy metals—and is of controlled pH. These are the qualities that you can depend on when you specify Baker Ammonium Sulfate for your injectables.

Whether you are manufacturing for defense or civilian use, we are able to supply you with Ammonium Sulfate (and many other fine chemicals) to meet your exacting requirements. Whatever your needs, consult Baker. For extreme purity and uniformity, by the drum—the ton—or by the carload—call on Baker—a reliable source of supply.

J. T. Baker Chemical Co., *Executive Offices and Plant,* Phillipsburg, New Jersey.

Baker CHEMICAL

Baker Chemicals

REAGENT • FINE • INDUSTRIAL

Marschalk Named Vick V.P.

H. R. Marschalk has been elected a vice-president of Vick Chemical Co., according to E. L. Mabry, president, and will be in charge of Vick's program of diversification and expansion through the acquisition of new subsidiaries.

H. R. MARSCHALK

Bowen Test Laboratory Ready

Bowen Engineering, Inc. has completed its new test laboratory in North Branch, N. J., with the latest design in stainless steel production equipment and the Bowen Laboratory Spray Dryer. Tests can be made on both units at temperatures up to 1000 F. using direct products of combustion as the drying medium. Tests can also be made at lower temperature limits using indirect heating where the material requires this treatment.

Facilities also include a laboratory for product evaluation, refrigerator room for storage of material requiring reduced temperatures and separate powder collection room.

Benzoic Acid Facilities Enlarged

Expanded facilities for the production of benzoic acid at Monsanto Chemical Co.'s John F. Queeny plant will be in operation shortly, according to Robinson Ord, general manager of sales for the company's organic chemicals division. The unit will produce benzoic acid by an entirely new synthesis from basic raw materials, the first such process in this country. It doubles the company's production of technical and U.S.P. grades of the acid as well as Benthal, Monsanto's benzoic acid for the alkyd resins industry.

Shine Promoted by Arnold, Hoffman

William M. Shine has been appointed director of market development for Arnold, Hoffman & Co., Inc., according to W. Chester Cobb, vice-president in charge of sales.

Jensen MM&R Division Mgr.

A. R. Jensen has been appointed head of the midwestern division of Magnus, Mabee & Reynard, Inc., with headquarters at 221 North LaSalle St., Chicago. He succeeds G. F. Mehren, now in charge of Pacific Coast Operations.

A. R. JENSEN

Merck Working on Georgia Plant

Merck & Co., Inc. is completing acquisition of a plant site on the Flint River near Albany, Georgia, where the company will produce medicinal chemicals. It will be the second Merck plant to be established in the South, the other being the Stonewall Plant at Elkton, Virginia. The plant is expected to begin production by the end of 1952, at first on a small scale, later expanding when manufacturing plans are more fully developed.

Rhodes & Dolcin Settle Suit

Rhodes Pharmacal Co., Inc., and Dolcin Corp. have settled pending litigation in the United States, the Dolcin patent, No. 2,471,394, having been acknowledged as valid.

BIMS Winter Party

The BIMS of Boston held their Winter Party on February 5 at the Weston Country Club, when over 50 guests enjoyed bowling, badminton, card playing, and a delicious roast beef dinner.

Prize winners were Richard W. Swanson, Raffi & Swanson, Inc.; Wilmer T. Starkey, Chas. Pfizer & Co.; E. D. Bement, B. B. Chemical Co.; W. E. Drown, Monsanto Chemical Co.; and C. E. Slye and G. E. Nealand, MIT.

Hart Harris Jr., S. B. Penick & Co., chairman of the executive committee, announced that plans were under way for three BIMS golf tournaments during the summer.

Receives Award from Dr. Klumpp

H. Q. Callahan, manager of the New Orleans professional service office, Winthrop-Stearns Inc., received the President's Trophy Award at the annual division managers' conference in Rye, N. Y., last month. Dr. Theodore G. Klumpp, president of Winthrop-Stearns made the presentation. Additional awards were made to professional service office managers Otto A. Wasen, St. Louis, and A. J. Stauff, Jr., Hartford, Conn.

The conference, which was attended by managers of all Winthrop-Stearns professional service offices, outlined new promotion and sales activities for 1952.

Dr. Bunn with Sharp & Dohme

Dr. Carl E. E. Bunn has been appointed staff veterinarian at Sharp & Dohme, Inc., according to Dr. S. F. Scheidy, veterinary medical director.

Grove Laboratories salesmen testing improved Fitch Dandruff Remover Shampoo formula at mid-winter sales meeting in Chase Hotel, St. Louis, last month. Gallon jugs contain water brought from 36 hard-water areas in their territories. Following the purchase of F. W. Fitch Co. some time ago, Grove carried out lengthy research projects. This is the result.

25 Years with Ciba

Mark S. Crooker and Eugene D. Perry were recently presented awards on their completion of twenty-five years with Ciba Pharmaceutical Products, Inc. They were honored at a special ceremony in the Summit, N. J. plant where they each received a service pin and $250 from T. F. Davies Haines, president.

Mark S. Crooker (left), Ciba Pharmaceutical Prods., Inc., Cincinnati representative, and Eugene D. Perry (center), Providence, R. I., representative, receiving awards from T. F. Davies, Haines, president, on completion of their twenty-fifth year with the company.

Jackson Retires from Hoffmann

L. G. Jackson retired from Hoffmann-La Roche Inc. at the end of 1951 after 28 years of service on the West Coast and has been succeeded by W. Frank Alexander, who takes on the responsibilities of Roche bulk vitamin representative for the entire West Coast. During his first 18 years with the company, Mr. Jackson represented the pharmaceutical specialty end of the business. He was chosen for the vitamin division in 1942 when the West Coast field staff was chosen.

Schenley Enlarges Sales Staff

Schenley Laboratories, Inc. has added six sales representatives according to Arthur F. Gormley, vice-president in charge of sales and advertising. These include Jack L. Hartin, Oklahoma City; John E. Kelleher, Hartford, Conn.; Richard C. Peters, Pittsburgh; Robert W. Strauss, Chicago; Samuel S. Bozian, Missouri, and William T. Allen, Shreveport, La., and Texarkana, Texas.

Farrell Joins GG Inc.

Don C. Farrell has been appointed director of sales and merchandising, according to Emily Watson, president of GG Inc., manufacturers of Pinwae Pincurl Home Permanent. He has been associated with the Walgreen Drug Co. and the Rexall Drug Co. in executive capacities.

DON C. FARRELL

Employees Honored by Coty

Forty-one men and women employed by Coty, Inc. for 25 years, and twenty-eight 15-year employees were honored by the company at a ceremony and party attended by all employees and members of the board of directors on February 8, at the Hotel Astor. Philip Cortney, president, addressed the group, and Grover A. Whalen, chairman of the board, presented an 18-karat gold medal engraved and coined in France to those who had been with Coty for more than 25 years, and a silver medal of similar design to those who had been there over 15 years.

Jordan in Upjohn Export Post

Robert S. Jordan has been appointed general manager of the newly established export division of the Upjohn Co., according to Donald S. Gilmore, president and general manager. He will assume complete responsibility for the direction of all categories of export operation and personnel.

ROBERT S. JORDAN

H. I. F. Assignment for Lowry

Sheldon G. Lowry, research assistant in the department of Sociology and Anthropology at Michigan State College, has become associated with the Health Information Foundation on a special assignment related to a study of health plans in industry. William H. P. Blandy, Foundation president, said the Foundation's industrial health research program, of which Mr. Lowry's work will form the first phase, is designed to determine the relationship between health programs in industry and productivity, absenteeism, labor turn-over and other industrial relations factors.

Australian Firm to Make ACTH

A composite Australian-Danish company has been formed in Australia to manufacture ACTH from pig, sheep and cattle pituitaries. Representatives of Frederiksberg Chemical Laboratories, Ltd., Copenhagen, and Drug Houses of Australia, Ltd., have formed the new company to be called Acton Laboratories (Australia) Pty., Ltd.

Directors are Arne Ludvigsen (Frederiksberg Chemical Laboratories Ltd.) together with Clive Catt and Dr. T. F. West of Drug Houses of Australia, Ltd.

Young—Amer. Chlorophyll Pres.

Cecil P. Young was elected president of American Chlorophyll, Inc., and Robert H. Van Sant, chairman of the board, at a special meeting of the directors last month. Mr. Van Sant has been president since the company's founding in 1933, and will now devote himself exclusively to research and development.

To give it a custom look that sells on sight, add a clever closure and label to stock bottle #A-8478.

SPRUCE UP with no mark-up

Now you can spruce up your line . . . give it a family resemblance and *still* keep within commercial limits on container costs.

HOW? Pack in Duraglas stock-mold bottles personalized for you with unique color treatment, individual closures and eye-stopping labels.

Owens-Illinois manufactures more than 1400 different stock-mold bottles . . . maintains a highly talented staff of packaging designers who can help you create an unusual package at no extra cost.

Decide now to find out how creative know-how applied to low-cost stock-mold containers can work for you at the point of sale. Call your local Owens-Illinois office today.

Duraglas bottles are protectors of quality

TRADE MARK REG. U.S. PAT. OFF.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Searching for something NEW?

Imagination . . . exploration . . . ORIGINAL RESEARCH !

. . . that's what is behind the aromatic bodies continually being discovered and produced in the Firmenich laboratories. These entirely new developments in pure science are offered to perfumers whose interest demands new effects to build original fragrance.

Behind the product original research

FIRMENICH & CIE.
SUCCESSEURS DE
CHUIT, NAEF & CIE.
GENEVE SUISSE

FIRMENICH INCORPORATED
250 West 18th Street, New York 11

CHICAGO OFFICE: 612 NORTH MICHIGAN AVENUE
FIRMENICH OF CANADA LTD., 348 WALLACE AVENUE, TORONTO
GENEVA, SWITZERLAND . . . PARIS, FRANCE . . . LONDON, ENGLAND

Members of Bristol-Myers' eastern sales division who met Jan. 31 and Feb. 1 at Biltmore Hotel, New York. E. Lloyd Bernegger, vice-president in charge of sales, is at extreme left.

J. Miller Heads Prentiss Drug

J. Miller was elected president of Prentiss Drug & Chemical Co., Inc., on February 18 to fill the post left vacant by the death of H. R. King on January 28. He was also re-elected treasurer of the company. Friar M. Thompson, manager of the insecticide division, became vice-president; Charles Hermann, manager of the chemical division, was re-elected vice-president; A. W. Bevernick, western manager, in charge of the Chicago office, was also re-elected vice-president and H. F. Seeland, in charge of the botanical drug division, was elected secretary. Malcolm Miller was named assistant-secretary.

Messrs. J. Miller, Thompson and Hermann were also elected directors of the company.

ADMA Biological Meeting

The ADMA Biological section will hold its spring meeting at the Hotel Warwick, Philadelphia on April 3 and 4.

Eaton Labs. Symposium

A symposium on tropical medicine was held at Norwich, N. Y., recently under the auspices of Eaton Laboratories. Guests included investigators of international renown in the field of chemotherapy of tropical diseases. Speakers were Commander J. M. Amberson, Naval Medical School, National Naval Medical Center; Captain B. A. Cole, acting chief, Department of Parasitology, Walter Reed Army Medical Center; Dr. L. Hellerman, associate professor of Physiological Chemistry, Johns Hopkins University School of Medicine; Dr. M. Natt, Hektoen Institute for Medical Research; and Dr. A. Packchanian, professor of Bacteriology and Parasitology, University of Texas Medical School.

Maxwell Heads Vanilla Bean Ass'n

J. R. Maxwell of Camax Co. was elected president of the Vanilla Bean Association of America for 1952 at the annual meeting last month. He succeeds James Schmidt, Dodge & Olcott, Inc.

Other officers elected were Charles Homan, Dodge & Olcott, as vice-president and J. Manheimer, J. Manheimer Co., as treasurer. The following were elected directors for a one-year term: Edward S. Buckley, Thurston & Braidich; W. H. Triest, Zink & Triest; and H. Solomon, F. Huber Co.

Cairns Represents Lueders & Co.

George Lueders & Co., Inc. has named William Cairns, 505 Independence Ave., Philadelphia, as representative for the Atlantic Seaboard states.

Smitskamp Appointed by Armour

G. F. Smitskamp has been appointed manager of procurement for the Armour Laboratories.

Bristol-Myers Sales Meeting

Bristol-Myers held a meeting of their eastern sales division on January 31 and February 1 at the Biltmore Hotel, New York, with 30 salesmen and sales executives present.

Schering Cortisone Goes to Mexico

Schering Corp. offered Cortadren (Cortogen) Ophthalmic Suspension, its preparation of cortisone for the treatment of eye diseases, to the medical profession in Mexico through its affiliate, Scheramex S. A., during the recent international ophthalmology congress in Mexico City. Dr. Eduardo Maldonado, director of the medical service department of Schering's International division traveled directly from the home offices to be present at this occasion which marked the opening of Scheramex, S. A. activities in Mexico.

Appointed by Innis Speiden

Richard Barton has been appointed technical advisor and sales manager for soil fumigants and agricultural chemical specialties by Innis, Speiden & Co., Inc. He had previously represented the company in a sales capacity in Philadelphia, Maryland, Delaware, and Virginia.

Lancome Sales Reorganized

Lancome Sales, Inc., distributors of Lancome perfumes in the United States, have been reorganized, according to Armand Petitjean, president and director general of Lancome S.A., and the new showroom and offices are located at 5 East 57th St., New York. David M. Kendall has been appointed as vice-president in charges of sales.

Guests who attended Eaton Laboratories' symposium on tropical medicine, left to right: Dr. A. K. Petretti, Eaton; Dr. M. Natt, Kektoen Institute for Med. Research; Dr. A. Packchanian, Univ. of Texas Med. School; Dr. L. E. Daily, Med. Director, Eaton Labs.; Dr. Hellerman, Johns Hopkins School of Med. and Dr. W. B. Stillman, research director, Eaton. Seated: Comdr. J. M. Amberson, Naval Med. School, and Capt. B. A. Coe, Army Med. Center.

Needle-Point Purity in Bulk . . .

HEYDEN
PENICILLIN and STREPTOMYCIN

Bulk purchasers place the same confidence in the high purity and potency of Heyden Antibiotics as the physician places in the sterility of his hypodermic needle. This "needle-point" assurance of safety and quality in bulk is the result of exacting manufacturing methods—rigid laboratory supervision from culture to shipping container.

When you specify Heyden Penicillin, Streptomycin or Dihydrostreptomycin your source of supply is as constant and assured as the superiority of the product itself.

BULK FORMS FOR YOUR CONVENIENCE

High-potency Penicillin, in hermetically sealed jars of 500 million units, 1 billion units, and drums. Special sizes on order.

Crystalline Procaine Penicillin G, Regular or Micropulverized, sterile.

Crystalline Penicillin G Potassium, sterile.

Crystalline Penicillin G Sodium, sterile.

Crystalline Penicillin G Potassium, tablet grade.

Streptomycin and Dihydrostreptomycin in bulk, for formulations in ointments, etc., available in 1 kilogram containers.

. . .

Packaged forms (Vials) of Heyden Penicillin, Streptomycin and Dihydrostreptomycin are also manufactured in all popular dosages, as well as Tablets (buffered and soluble) and Troches of Penicillin, sealed in foil.

Increased production facilities are now under way. Write today for particulars on availability and fully detailed brochure covering all Heyden Penicillin and Streptomycin products.

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION
393 Seventh Avenue, New York 1, N.Y.

Hafner Named V.P. of Berlage Co.

Arthur P. Hafner, for the past 30 years with Orbis Products Corp., has joined J. Berlage Co., as vice-president He will be in charge of the company's essential oil, aromatic chemical and related commodities division.

Carter Retiring from Abbott

Edgar B. Carter is retiring from Abbott Laboratories as director of research on April 1. He joined the Swan, Myers & Co. in 1915 and became associated with Abbott Laboratories in 1931 when the two companies merged.

Leaves Northam Warren

Mariechen Wilder has resigned as publicity director of Northam Warren Corp. to become Beauty Editor of Today's Woman.

Duveen Addresses Grolier Club

Denis I. Duveen, president of Reinitz Soap Corp., addressed his fellow members of the Grolier Club on February 19. At the same time he placed on exhibition from his library the writings and memorabilia of Antoine Laurent Lavoisier. The exhibit traces the development of Lavoisier's work from his adolescence to his untimely death at the age of 50.

Cecil Smith Golf Tournament

The date of the Cecil Smith Memorial Golf Tournament has been changed from Tuesday, May 6, to Thursday, May 8. The tournament and dinner will be held at the Winged Foot Golf Club in Mamaroneck, as previously announced.

Regna is Fellow, Acad. of Sciences

Dr. Peter P. Regna, among the scientists at Chas. Pfizer & Co., Inc. who discovered terramycin, has been elected a Fellow of the New York Academy of Sciences. He has also made investigations into the chemistry of such antibiotics as penicillin, streptomycin, subtilin, bacitracin, polymyxin, mycomycin, and neomycin.

Eastern division sales meeting of Innis, Speiden & Co. held in New York office during week of Jan. 28, attended by all dept. managers and all sales personnel from New York, Boston, Philadelphia, and Gloversville. D. S. Cushman, vice-president, reviewed 1951 operations.

Named V.P.'s of Bourjois

E. Raymond Johnson and Frank P. Yates were elected vice-presidents of Bourjois, Inc. and Barbara Gould, Inc., at a recent meeting of the board of directors. They have both been with Bourjois for more than thirty years; Mr. Johnson will continue as sales manager, and Mr. Yates will supervise the southwestern sales division of both companies.

N. Y. Aromatics Named Sole Agent

New York Aromatics Corp. has been appointed sole agent for the United States by the Grasse essential oil firm, Mero & Boyveau, which has extensive factories producing essential oils, floral absolutes, resinoids, compound perfune bases, and fruit essences.

Lee, V.P., McKelvy Co.

B. H. Lee has been named vice-president in charge of sales for the Alfred D. McKelvy Co., according to L. F. Bonham, president. He joined Vick Chemical Co., the parent company, in 1936 as a sales trainee, later becoming a member of the new product division, and was promoted to assistant to the president of McKelvy in 1945, and later, in charge of production and product development.

Henry O. Dow has been appointed to the newly created post of field sales manager for the subsidiary company.

Stokes Appointments

Joseph D. Robertson and Robert M. Krause have been appointed to the Philadelphia and Cleveland offices, respectively, of the F. J. Stokes Machine Co. Walter Rayher has been transferred from the Cleveland office to the Stokes home office to assist and represent the territory covered by Mr. Robertson.

Amic Receives Legion of Honor

Francois Amic, director general of S. A. des Etablissements, Roure-Bertrand Fils & Justin Dupont, has received the Legion of Honor France for service to the essential oil and perfume material industry. He is directly in charge of the Grasse organization and lives in Grasse, France.

Clark Named Pres. Package Mach.

Roe S. Clark was elected president of the Package Machinery Co. at the 39th, annual stockholders meeting on February 13, succeeding Roger L. Putnam, now on leave of absence in Washington D.C., as director of the Economic Stabilization Agency. He has been associated with the company since 1916, starting as a factory accountant. He became assistant treasurer in 1921 and was elected treasurer in 1931. During the ensuing years, he became a vice-president, director, and chairman of the executive committee.

DR. PETER REGNA

B. H. LEE

ROE S. CLARK

CHOLESTEROL IN ITS MOST ACTIVE AND EFFICIENT FORM

the
AMERCHOLS
are naturally superior

The AMERCHOLS are surfactants which are NATURALLY good for the skin and hair. They are odorless, color free forms of cholesterol and related rare sterols which we isolate in purified form from animal tissues. They are stable in the presence of acids, alkalies and most drugs.

Try AMERCHOL L-101 in your hair preparations. It is a highly effective liquid-cholesterol penetrant.

WE KNOW OF NO CASE OF ALLERGY DUE TO AN AMERCHOL

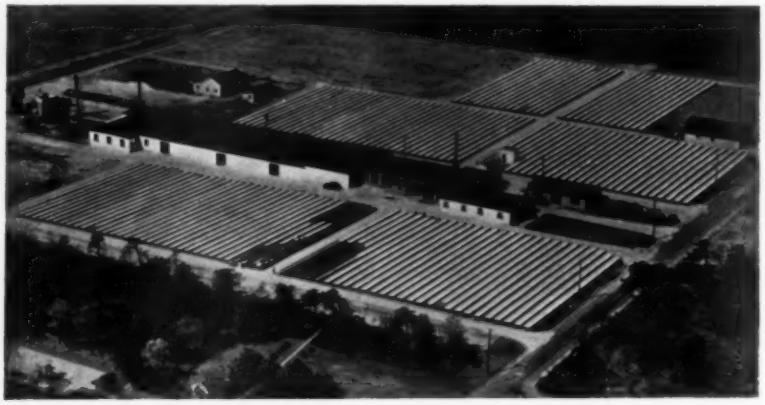
Our research laboratories are available to you for advice and information. Our booklet will help you formulate the AMERCHOLS in O/W and W/O emulsions.

LABORATORY DATA
FOR PHARMACEUTICALS AND COSMETICS
AMERCHOL
STEROL PRODUCTS
AMERICAN CHOLESTEROL PRODUCTS INCORPORATED MILLTOWN, NEW JERSEY

AMERICAN CHOLESTEROL PRODUCTS
INCORPORATED
MILLTOWN - - - NEW JERSEY

KOSTER KEUNEN
★
BEESWAX

U. S. P. Pure Sunbleached
U.S.P. Pure Yellow Refined



Office and Refinery: Sayville, N. Y.

MICRO-CRYSTALLINE PETROLEUM WAXES

OZOKERITE • SPECIAL WAX BLENDS • CERESINE

Ask for samples, prices and technical data

KOSTER KEUNEN • • • • SAYVILLE, N. Y.

PHONE: SAYVILLE 400

Drawing of Potdevin Machine Co.'s new one-story brick industrial building with manufacturing space of about 102,800 square feet. The plant is located in Teterboro, N. J.

Dr. Naves Visiting U. S.

Dr. Yves-Rene Naves, research associate of L. Givaudan & Cie., S. A., Vernier-Geneva, Switzerland, arrived in the United States earlier this month for a three-week visit. He will attend the 121st National meeting of the American Chemical Society in Buffalo from March 23 to 27, when he will be presented with the Fritzsche Award for 1952 and at the same time will

DR. YVES-RENE NAVES

give a paper on the "Optical Methods and Terpene Molecular Structures," before the division of Organic Chemistry of the A. C. S.

On March 20 Dr. Naves will deliver a lecture in New York before a joint meeting of the American section of the Societe de Chimie Industrielle and the French Engineers in the U. S. The lecture, which will be given in French, is entitled, "L'Influence du Chimiste sur l'Evolution des Industries de Matieres de Parfumerie." This meeting will be held at 5:45 p.m. at the Cultural Services Building of the French Embassy, 934 Fifth Ave.

Sales Mgrs., Grove Labs.

L. James Thompson and Fred W. Greene, sales representatives of three midwestern states and three southeastern states, respectively, for Grove Laboratories, have both been named district sales managers.

Fitzsimmons President of Orbis

Charles S. Fitzsimmons has been appointed president and treasurer of Orbis Products Corp., and C. T. Palagonia has rejoined the firm as sales manager.

Green Represents Lueders in South

Tom F. Green, 1445 Claiborne Ave., Shreveport, La., has been named representative of George Lueders & Co., Inc. in the southern states.

BEN A. BENTLEY

Bentley Promoted by Ciba

Ben A. Bentley, for three years a district sales manager for Ciba Pharmaceutical Products, Inc., has been appointed manager of the company's eastern sales division, according to Vincent A. Burgher, vice-president. He assumed his new duties on February 15 when the resignation of his predecessor, James A. Winning, became effective. Mr. Winning left Ciba to join the Valley Drug Co. of Youngstown, Ohio, as a partner.

Taylor Appointed by Hooker

Donald L. Taylor has been appointed manager of general developments in the development and research department of Hooker Electrochemical Co., according to J. H. Babcock, vice-president in charge of development and research. He will be concerned with general expansion of the company's operations.

Potdevin Moves into N. J. Plant

Potdevin Machine Co. has moved from its Brooklyn location to a completely new one-story brick industrial building at 285 North St., Teterboro, N. J. The new quarters have a manufacturing space of about 102,800 square feet and house two former Brooklyn divisions as well as the Potdevin Export Corp. executive offices. The new plant is situated on a 6-acre tract and combines all present Potdevin manufacturing and sales operations under one roof, as well as providing for immediate and future expansion plans.

Dr. Luckhardt with Roerig & Co.

Dr. Arno B. Luckhardt, recently retired as distinguished service professor of physiology at the University of Chicago, has been appointed medical director of J. B. Roerig & Co., Chicago, according to H. W. Frizzell, president.

DR. ARNO. B. LUCKHARDT

Dr. Fred Finley Fitzgerald

Dr. Fred Finley Fitzgerald, 69, director of research for American Can Co. from 1935 until his retirement in 1942, died February 7, at Joliet, Ill., following a two-month illness. He began with American Can in 1920 as manager of the research department at Maywood, Ill., which position he held until his appointment as director of research, New York City, in 1935.

He is survived by his widow; two sons, John M. and F. Franklin; a daughter, Mrs. Carlos Monsalvo; three sisters, two brothers, and four grandchildren.

Arthur I. Risser

Arthur I. Risser, president of the U. S. Bottling Machinery Co. since 1912, died February 27 at his home. He is survived by a son, Ivan H., and a daughter Mrs. Thomas J. Smith.

Processing ACTH in Stokes Vacuum freeze-drying equipment at Armour Laboratories, Chicago, Illinois.

Modern Benefits

to the hog.....from the hog

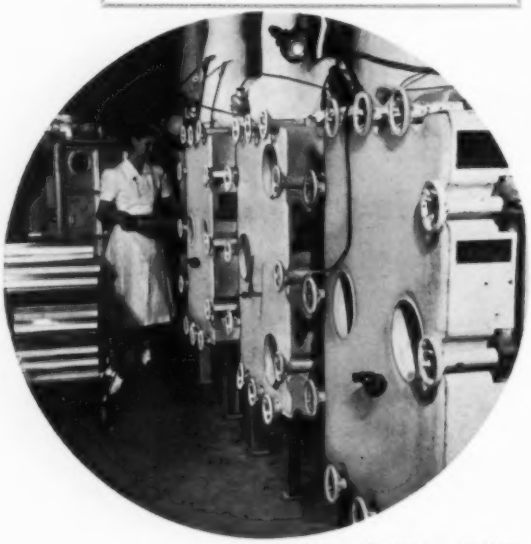
by Vacuum Processing

New serums made by vacuum freeze-drying give promise of wiping out the plague of hog cholera which for a century or more has cost the world incalculable millions of dollars.

New hormones made by vacuum freeze-drying from hog glands are effecting dramatic alleviation or cure of arthritis and many other diseases.

Vacuum freeze-drying – one of many modern techniques pioneered by Stokes and carried out commercially with Stokes equipment – captures life, defies oxidation, halts aging, preserves potency, for the benefit of mankind.

Stokes engineers invite consultation on modern vacuum techniques of chemical processing – drying, impregnating, metallizing – of pharmaceuticals, chemicals and many industrial products.



Vacuum freeze-drying of hog cholera serum at Pitman-Moore Laboratories, Zionsville, Indiana.

STOKES

STOKES MAKES

Plastics Molding Presses,
Industrial Tabletting
and Powder Metal Presses,
Pharmaceutical Equipment,
Vacuum Processing Equipment,
High Vacuum Pumps and Gages,
Special Machinery

F. J. STOKES MACHINE COMPANY, 5932 TABOR ROAD, PHILADELPHIA 20, PA.

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Labor Education

Not long ago I had an opportunity to discuss labor education and every business man's responsibility for it with a large group of personnel men in a highly industrialized mid-western town. I told these men quite frankly that I didn't think they were doing their part in educating workers in the meaning and spirit of the free enterprise system. I pointed out that since they stand between management and labor they are in a unique position to carry on an incessant educational program with the workers with whom they are daily in contact.

It is a fact that workers universally are suspicious of the motives of management. Historically, they have every right to be. Although most American workers in the past twenty years have had a square deal from their employers there have been still a sufficient number of instances where workers were double-crossed by management or lied to or given an utterly unfair deal, so as to cast a bad reflection upon the motives and methods of all business men.

I think we have been very remiss in teaching our workers the facts of industrial life. We have allowed the unions to promulgate the idea that, whether he is unionized or not, the living conditions, the leisure and the wages, the average American worker now enjoys are entirely due to the efforts of the unions. In traveling around the country I have asked workman after workman to what he attributed his wages, working time and working conditions. In the great majority of instances they say, "the unions" and when their plant is not unionized, they explain that the unions forced their bosses to get on the bandwagon. The other answer I frequently get is that the benefits enjoyed by the workers are particularly due to the Government.

The communists incessantly and subtly promote the idea that everything the American workman enjoys had to be taken from his bosses by compulsion of one form or another. Nothing could be farther from the truth. But almost without exception American business men are standing idly by, making little or no organized effort to challenge the lie, which in its immediate effect promotes the cause of unionism and in its ultimate effect may destroy the free enterprise system altogether.

The facts which you should get across to your workers are these:

The benefits of high wages, good working conditions and leisure were initiated in 1914 by Henry Ford when he established the eight hour day and the $5 minimum wage. It was an enormously revolutionary step. Ford forced other automobile manufacturers to accept his standards. From the automobile industry the idea spread into the steel industry and from there it began to permeate the whole industrial fabric.

And the unions had nothing whatever to do with it.

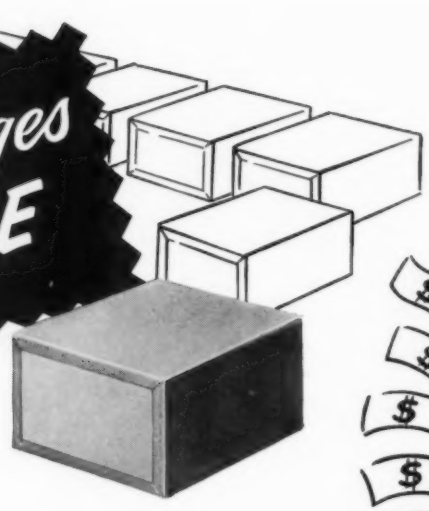
The Ford organization at that time was not unionized nor was it unionized for many years after. The unions at that time were perfectly willing to accept the 58-hour week as standard and a 20c an hour rate for mechanics.

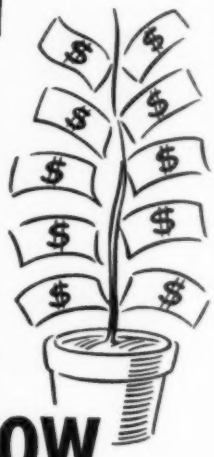
The initial impetus was given by Ford, who recognized that workers are customers and that as customers they must have money and time in which to spend it, if business is to prosper. Then along came World War I with its demand for supplies and munitions for the Allies. Up to that time the United States was still largely an agricultural nation. We had virtually no chemical industry at all; the Germans owned and controlled it. We had to create a chemical industry as we had to create industries of many other kinds to supply the needs of the warring nations. This created a demand for industrial workers far in excess of supply and farm workers were siphoned off the farms by the millions into burgeoning new industrial plants and shipyards. The great demand for skilled and unskilled industrial workers had a natural and inevitable influence in raising wages.

Again, the unions had nothing whatever to do with the influences that caused this demand for labor and increased its price several fold.

The next influence which had a stimulating effect on

Put your Packages in a BUNDLE





and WATCH YOUR SAVINGS GROW

One of our Model F-6 machines bundling Dr. Lyon's Tooth Powder in the plant of R. L. Watkins Co.

Machine bundling isn't new. We originated machines for this purpose quite a while ago. . . . But lately this money-saving method of getting goods to market has met with increasing favor, because the need for new economies is so great today. Also because our bundling machines have proven so efficient and practical.

With one of our machines you can bundle a dozen, half dozen or fewer cartons at speeds that show a large saving over hand packing. Equally large are the savings you make on material costs—because you use economical kraft paper in roll form instead of costly boxes.

The machine can be equipped with an assembling unit, fed by conveyor from the cartoning or wrapping machines. This unit assembles the packages in the desired manner—one layer, two or three layers—and feeds the assembled group into the machine. You have a completely automatic line that requires the minimum of personal supervision.

Get the facts on why so many companies are now bundling on PACKAGE machines

PACKAGE MACHINERY COMPANY • *Wrapping Division*
Springfield, Massachusetts

NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA
DALLAS DENVER LOS ANGELES SAN FRANCISCO SEATTLE
TORONTO MEXICO, D.F.

SEE US AT THE PACKAGING SHOW, APR. 1-4 ATLANTIC CITY AUDITORIUM, BOOTH 311

PACKAGE MACHINERY COMPANY

Over a Half Billion Packages per day are wrapped on our Machines

workers' wages and caused employers to provide better working conditions and shorter working hours, was the reconstruction and expansion period of the Twenties when we expanded our own industrial plants enormously and had to rebuild those of Europe.

Again, the unions had nothing whatever to do with the underlying causes which benefited American workmen so greatly.

Let us not forget the influence of the advertising agencies which really began to function in the early nineteen twenties. By stimulating demand through advertising of every kind, production volume was increased enormously to meet the demand for products and this in turn created hundreds of thousands of jobs.

It is true that during the early thirties many American workmen lost their jobs and suffered greatly. So did their employers. But if the unions had had the power to create good working conditions and the highest scale of wages ever paid in the history of the world, why didn't they use that power to prevent the total loss of wages and other benefits that so many millions of American workmen suffered during the depression?

The answer is, they didn't have the power and they still haven't it.

Even under the protection of New Deal legislation the unions never succeeded in enlisting more than 25 per cent of all American workmen. It is difficult to see how such a minority could have had such a universal influence as they claim.

No one can deny the right of workers to organize in unions. Unions are an effect, not a cause. They are the effect of the greed, ignorance and lack of education of our fathers and grandfathers who were in business for the utmost profit only for themselves and "let the public be damned!" as one of them succinctly expressed it. If previous generations of employers had been as perceptive as by and large the present generation is there wouldn't have been any need for unions and we wouldn't have had any. And by the same token if we must have unions it is a pity that they are not all as responsible and as ably directed as the needle trades unions which have been beneficial both to employees and employers alike.

I certainly don't wish to give the impression that all unions are communistic or that they all voluntarily give aid and support to the enemy. Nevertheless they do give such aid when they lie about the part the unions have played in creating present working conditions and also when they insist that employers always act contrary to the interests of their workers. The fight against the communists is as much the fight of the unions as it is the fight of the employers. In the communist countries there are no unions. The unions, the workers, the employers should constantly be conscious that in this battle against a common enemy united we stand; divided we fall.

No one can deny that there is not a substantial minority of business men who still are avaricious, ignorant and purblind. They are the enemies of labor. They also are the enemies—and the termites—of the free enterprise system. They are the friends of communism.

The communists are steadily making headway in all levels of American life. Their propaganda is subtle, incessant—and on a world-wide scale—obviously effective. Since their methods are undeniably effective in promoting the spread of their doctrine we should—and we can—emulate without dishonor—some of their educational methods. One of their methods is to create a "cell". This cell, who may be a trained individual or a group of individuals, works like a termite incessantly and under cover to spread the insidious poison of communist doctrine.

We, too, can create "cells" of intelligent, trained workers to spread the truth about the free enterprise system among the individuals with whom they are associated. I told the personnel men at the meeting I addressed, that each should constitute himself a cell to spread the truth about the benefits of the free enterprise system and to combat the poisonous lies spread by professional communists and their unwitting dupes, the union organizers.

This isn't a project to be undertaken by sporadic campaigns accompanied by a lot of fanfare. It is a job to be done continuously and incessantly—just as the communists do it.

We should go further. As business men we should fight for our country and the system that made it great by sending groups of trained and devoted workers abroad to work in foreign plants to spread the doctrine of free enterprise. We have enough foreign born workmen in this country, who know the benefits of the free enterprise system, and who could be sent back temporarily to their own countries to teach what free enterprise really means. There was a time when, throughout all the world, America was regarded as the land of hope and opportunity. We have lost that position in the eyes of the workers of the world. We can regain it but only if you and I as individuals will do our part and more.

Point Four

The government's Point Four program is certainly idealistic. It sounds very well to give aid and sustenance to backward nations (at your expense and mine) and to continue this aid until such nations are self supporting—if they ever will be. And I doubt if they ever will be unless our aid is based upon limitation of population by recipient nations. There appears to be no moral reason why we should continue to support unbridled breeding anywhere in the world. Starvation does not seem to have a restricting effect upon population unless it becomes complete and utter famine. If we avert famine among backward peoples we stimulate the population of the world by the unfit. With each boatload of wheat we ship to backward areas, we also should ship a cargo of contraceptives and teach these people the art of birth control. The population of the world is increasing in spite of famine and wars at such a rate as to cause profound alarm among soil scientists, who continually are emphasizing that, in spite of vastly im-

Pacquins . . .

famous for

smoothing skin . . .

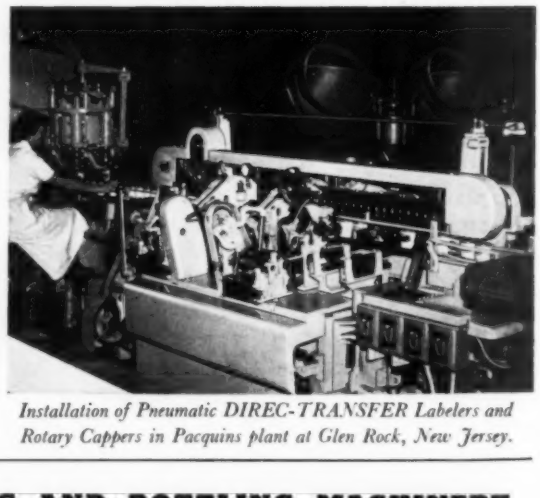
use PNEUMATIC . . . famous for smoother labeling

"Smooth as silk" could describe the way milady's skin feels, after using PACQUINS . . . or the way Pneumatic filling and labeling machines do their job in PACQUINS model plant.

A glance at the PACQUIN containers will tell you . . . this is no easy labeling job. It calls for precision of the highest order — the kind of precision that Pneumatic equipment can *always* be depended on to give, day in and day out, at top speeds.

Built according to the highest engineering and manufacturing standards in the field, Pneumatic machines operate with money saving efficiency, handling a great variety of world famous products. If you, too, are looking for "lower cost per container" . . . better look Pneumatic's way.

PNEUMATIC SCALE CORP., LTD., 70 Newport Avenue, Quincy 71, Massachusetts. *Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.*



Installation of Pneumatic DIREC-TRANSFER Labelers and Rotary Cappers in Pacquins plant at Glen Rock, New Jersey.

PNEUMATIC

PACKAGING AND BOTTLING MACHINERY

proved agricultural techniques, we are rapidly exhausting our own soil in a blind effort to feed the world.

Many people on religious grounds will vehemently disagree with my point of view on birth control but I confess myself unable to find anywhere in Christian literature a directive which places upon any man a moral compulsion, or give him a moral right, to beget more children than he can feed. The reverse would seem to be moral or practical anyway.

Filing

January's Readers' Digest has an amusing but profoundly true article on the folly of filing. Read it. As I have so often pointed out here an immense amount of costly time is wasted keeping useless records and filing useless papers.

It all goes back to the business schools which teach that copies should be made of everything and stenographers are trained instinctively to set up carbon copies, to such an extent that it is damned nearly impossible to untrain them. Stenographers should be taught in the schools not to make copies of anything unless they are told to do so by the person who initiates the letter. That would simplify the filing problem and save a lot of time all round.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Heavy Duty Load-Veyor

Extra light and of high capacity, the new Market Forge Load-Veyor is designed to handle heavy loads. This 20″ wide heavy duty Load-Veyor is made in 5′ and 10′ sections with 45° and 90° curves to suit special and individual needs. Ball-bearing Wheels 2″ diameter and 5/8″ wide are spaced on slightly less than 3″ centers. Available wiith welded-on connectors which are inter-connectable with the majority of other wheel conveyors of the same size. It can also be supplied with Market Forge removable type connectors.

Extra strength and durability is provided by use of tension members without the addition of unnecessary weight . . . the weight of a 10′ section is only 69 lbs. The standard arrangement is with the wheels set above the side channels.

Actual tests have proved that with a load of 2000 lbs. distributed over the surface of the conveyor supported on only two stands, one at each end, there is less than 3/8″ deflection at the center making the Load-Veyor practical for heavy loads without extra supports or stands.

The Load-Veyors are rated to take loads of 1000 lbs. covering the surface of the conveyor and for individual loads up to 300 lbs. per unit.

The side channel members are joined by inverted angles welded to both side channels. There is one at each end and one in the center on 10′ section. This arrangement of inverted angles receives the adjustable stands and also strengthens the frame.

Available from Market Forge Co., Materials Handling Div., Everett 49, Mass.

New Filling-Room Process

In an effort to further improve the sterile technique in its dry-filling room, the engineering staff of Schenley

Laboratories, Inc., headed by W. H. Klepper, plant engineer, designed this stainless steel and aluminum equipment for the production-line filling of various size bottles of parenteral penicillin, streptomycin, and dihydrostreptomycin. Other dry products designed for use as injections, including Schenley's Aquacillin, Aquacillin-D.A., and Syncrobin, can also be handled in this new sterile room. The picture shows a closeup of the standard filling machine with the Schenley improvements. This new equipment (which, incidentally, was built in Lawrenceburg) is an outstanding example of the care and cleanliness Schenley Laboratories employs throughout its production operations.

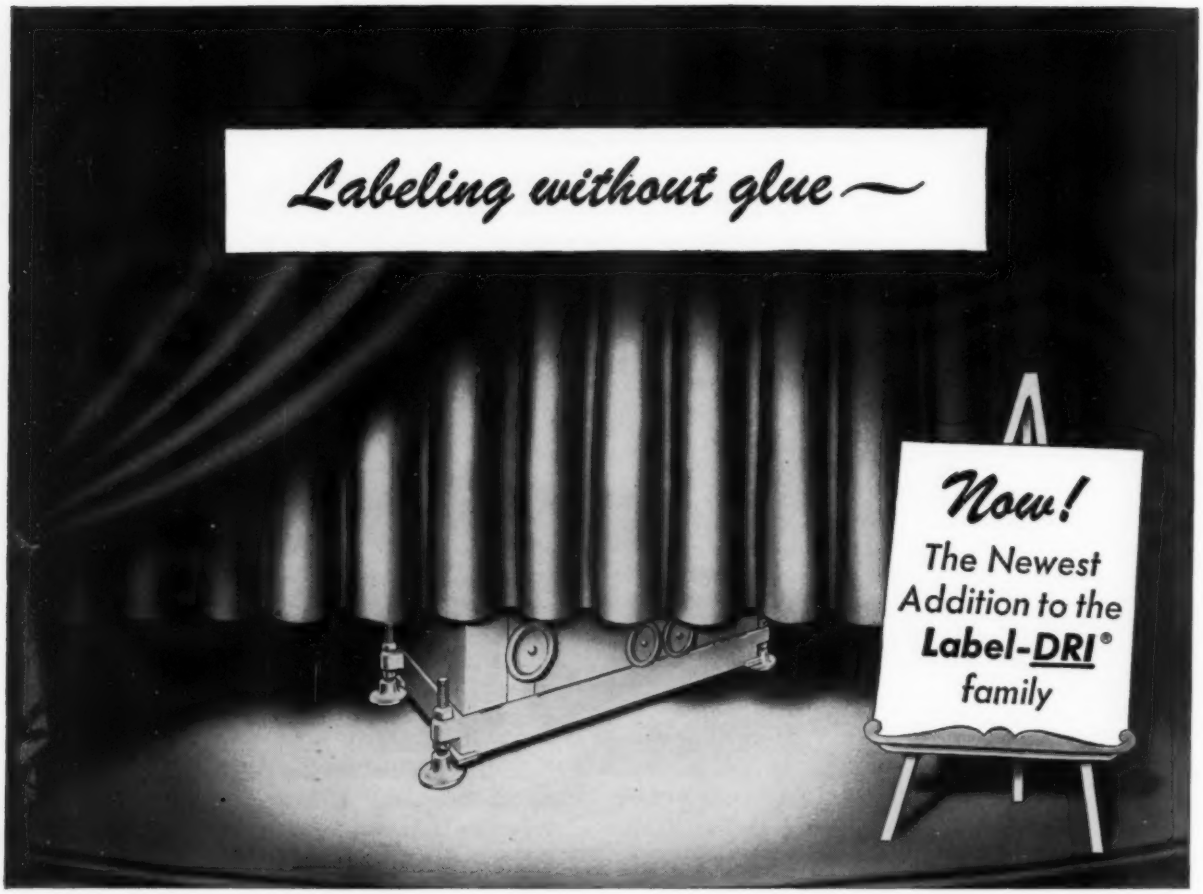
Colton Developments

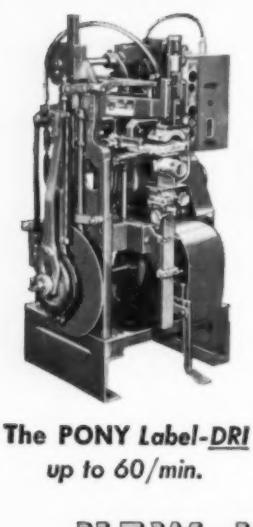
Two new engineering developments will be exhibited by the Arthur Colton Company, Division Snyder Tool & Engineering Company, Detroit, at the National Packaging Exposition, Atlantic City, April 1-4.

Featured in the modernized line of pharmaceutical, tableting and packaging equipment at the Arthur Colton booth (Booth 801) will be "the first collapsible tube holder of its kind," Hollidge said. Termed the "Kasle" tube holder, it has been developed to automatically position and hold collapsible tubes of slightly varying diameter during filling.

Another new Colton development to be exhibited is the No. 160 machine for filling, closing and crimping tubes. "This machine is noteworthy," Hollidge said, "in that it fills a long-existing need in that middle volume bracket, between high production and low production levels, where low first cost in the machine itself is also a factor."

Also on display for the first time will be the new Colton No. 30 Tablet Duster, an item of auxiliary equipment which can be synchronized to the production rate of any Colton tablet press and which is unique in





The PONY *Label-DRI*
up to 60/min.

★
SEE IT AT THE PACKAGING
SHOW-BOOTH #512—APRIL 1-4
ATLANTIC CITY, N. J.

The *Label-DRI* CHAMPION
up to 300/min.

910

NEW JERSEY MACHINE Corporation

AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES
325 W. HURON ST., CHICAGO 10, ILL.
1701 CAREW TOWER, CINCINNATI 2, OHIO
2500 W. 6TH ST., LOS ANGELES 5, CAL.

MAIN OFFICE & FACTORY: 1550 WILLOW AVENUE, HOBOKEN, N. J.

that it turns the tablets over several times in order to assure complete dust removal.

All machines at the Colton exhibit will be operating during show hours so that operating speeds and efficiency may be observed.

The new Colton patent, "Kasle" tube holder, also will be demonstrated. A section of the holder under light spring pressure holds the tube firmly without squeezing it. A slot at cap depth allows for automatic cap tightening in the fill cycle. The tube holder and the cap tightening equipment, according to Hollidge, can be installed on any Colton automatic tube filling machine in a matter of minutes.

Table Tops

Stainless steel tops for laboratory furniture are now offered by Fisher Scientific Company. The tops are manufactured in Fisher shops to fit basic models of Unitized Laboratory Furniture, sold exclusively by Fisher's five plants.

Each top, supported by thick plywood sections, is made in one piece with an integral splashback and reagent shelf. Stainless steel used in the new tops contain over 30 percent non-ferrous alloying materials, making it highly resistant to the action of common laboratory reagents.

All edges of the tops are a continuation of the upper surface and adjacent edges are clearly welded. The front edge is not sharp-angled but *rolled* for the protection of the laboratory worker. Also it forms a convenient drip edge on the underside. Concealed bolts and Neoprene strips close the joints between adjacent units in an assembly and produce a liquid-tight fit.

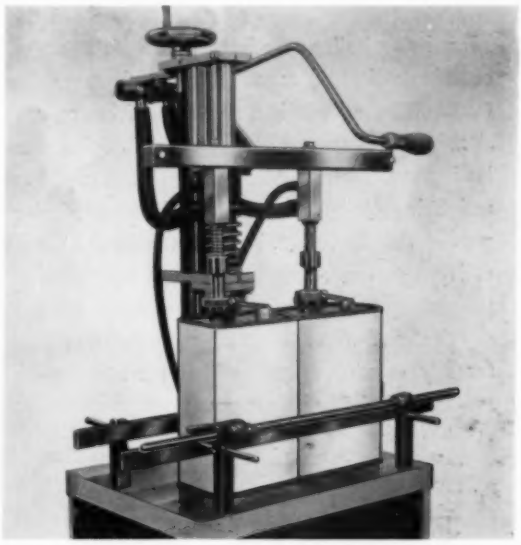
Use of a non-porous working surface and sealing of joint openings are desirable in all laboratories; where work is done with radioactive materials these precautions are imperative. Stainless steel working surfaces are also ideal in food, public health and hospital laboratories.

The Fisher line of Unitized Furniture features a wide variety of table, cupboard, drawer-cupboard, corner-cupboard and drawer units. All items are immediately available from large, central stocks and can be easily installed to construct a laboratory in virtually any space . . . Fisher Scientific Company, 717 Forbes Street, Pittsburgh 19, Pa.

Can Filler

Packer Machinery Corp., 30 Irving Place, New York 3, N. Y., manufacturers of semi-automatic liquid filling machines, announces the addition of a new, low cost, semi-automatic liquid filling machine known as the Packer "Bench Model Liquid Filler." This compact unit is normally available in two different types. One unit, supplied with pump and motor, for vacuum operation; the other unit for filling only by gravity. Where the filling requirements are complex, a combination unit is offered to allow filling by either vacuum or gravity. The machine has been designed to meet the increasing demand of companies who do not have the need for larger, high production models and who are interested in a small, economical liquid filler.

The "Bench Model Vacuum Liquid Filler" is able to fill metal and glass containers from fractional ounces to quart sizes. It is available in 3 and 4 spouts and fills directly from drum, carboy and other type container



resting on the floor. Speeds in excess of 25 containers per minute. Overflow is conveniently handled by an overflow jar.

The "Bench Model Gravity Liquid Filler" is recommended for those who are filling gallon cans or liquids that cannot be filled satisfactorily by vacuum method. The standard unit, equipped with 2 gravity spouts, fills from fractional ounces to 1 gallon cans. Speeds: approximately 10 pints or 4 gallons per minute. The overflow is handled by an overflow jar attached to outlet hoses.

Strip Seal

To fulfill the need for an inexpensive means of heat sealing pills or other small objects in a continuous strip, Globe Products—Heat Seal Corporation announces their new "Strip Seal-It" Model. This ingenious machine forms individual airtight pockets up to a maximum of 1¼ inches in diameter in any heat sealing material. It will also form pockets up to 1¼ inches square in either a single or double row.

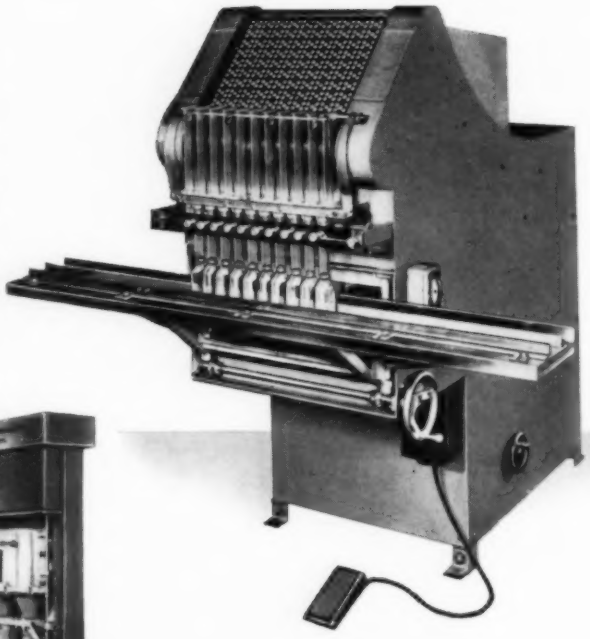
Mounted on its own portable metal stand, this machine requires no motor. Top sealing jaw of the machine, which is heated, is lowered for sealing by merely pressing on the "Kick-Leg Foot Lever." This exclusive feature produces ten times the pressure at the jaws as is exerted by the foot. As a protection for pharmaceuticals or other delicate objects, the bottom jaw is not heated.

Operation of "Strip Seal-It" is simple and fool-proof. Two rolls of heat sealing material are threaded through the feeding groove of the machine under the sealing

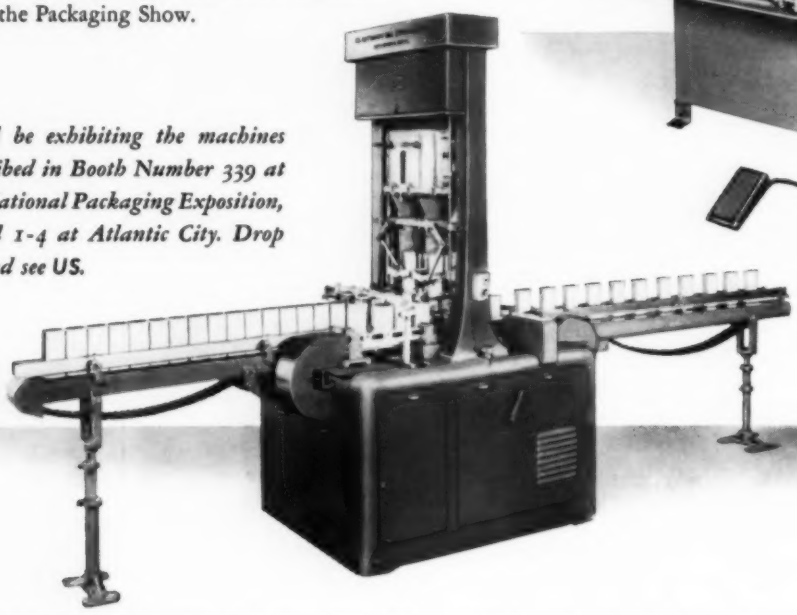
Visit US AT THE PACKAGING SHOW

You'll see these machines in operation

Now being built and offered by **US** is the tablet counting and filling machine that you knew as the Crandall Counter. It is a natural addition to our already well-known tablet filling machinery because it will serve in many applications where its counting and filling method is more suited to a particular product than those of existing machines. The Crandall type machine shown is operator-controlled as to the placing and filling of bottles. It may be optionally equipped with a bottle conveyor and modified for fully automatic operation. See the new automatic model at the Packaging Show.



We'll be exhibiting the machines described in Booth Number 339 at the National Packaging Exposition, April 1-4 at Atlantic City. Drop in and see **US**.



The Model JK Automatic Filling Machine fills, with closest accuracy, all kinds of powdered and granular materials into cartons, cans or bottles. Normally, operation is to fill under controlled pressure, but for materials that require settling rather than packing, a vibrating filling platform can be furnished. The Model JK is equipped with dust collector hood and positive shut-off gates that eliminate drip at the augers, thus making the entire operation absolutely clean and keeping the surrounding air free from dust. See this twin station high speed powder filler at the Packaging Show or write **US** for details.

U. S. AUTOMATIC BOX MACHINERY CO., INC.

Owning and Operating NATIONAL PACKAGING MACHINERY CO. ★ CARTONING MACHINERY CORP.

45 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Branch Offices: New York ★ Cleveland ★ Chicago

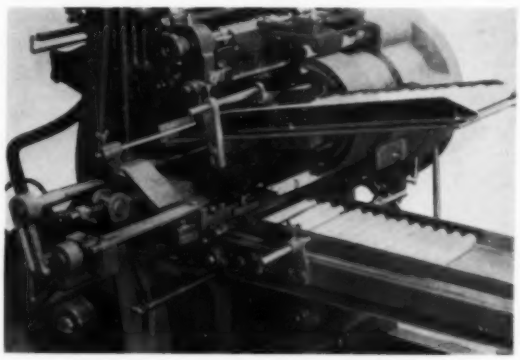
Net and Gross Weighing
Package Forming and Filling
Carton Sealing, Lining,
Wrapping, Box Making

head. The pills or other objects to be sealed are dropped by the operator into a self-aligning slot, at the left of this groove. At the same time, with his right hand, the operator pulls the strips through the groove to an inscribed mark. This automatically places the object to be sealed between the strips and in position for sealing. The sealed objects extend in a strip from the right of the feed line and can be cut off in units of any desired length.

This machine will efficiently handle any heat sealing material such as cellophane, foils, pliofilm, etc. supplied in rolls of suitable width. Operation is simple and can be mastered in a very short time. An operator of average ability should be able to attain quickly a speed of 20 to 30 pockets per minute.

Tube Labeler

An other type of machinery is available for collapsible tube labeling. This is a unit which applies either a fully adhered wrap around label or a slip label to empty collaspsible tubes. The machine includes an automatic infeed and an automatic discharge and the flow of work is arranged so that the unit can be used adjacent to a



tube filler and eliminate any rehandling necessary between the two machines.

This is a modification of the Pony Labelrite and has a capacity up to 60 per minute.

Another Pony is available with a less expensive attachment for handling collapsible tubes, but in this case the operator is required to feed each one over a mandrel making it a labeling process that is dependent on the dexterity of the operator rather than being entirely automatic.

These machines are made by New Jersey Machine Corp., 16th & Willow, Hoboken, N. J.

New Hydropulse Homogenizer

The new Hydropulse homogenizing pump is made by the Pioneer Division of Scott & Williams, Inc.

The Hydropulse is unique in that the processed fluid is completely isolated from the actuating mechanisms and comes in contact only with the rubber pulsators, stainless steel, and the nylon ball valves.

Further information may be obtained by writing to the pioneer Division, Scott & Williams, Inc., 350 Fifth Avenue, New York 17, New York.

Portable Powder Loader

Illustrated is a portable air conveyor of the suction or vacuum type for the transfer of powdered products and granulated material. It is particularly designed to fill and periodically replenish machine supply hoppers or bins and to empty containers and shipping drums without dumping same to avoid dust nuisance and spillage.

Wherever granules and powders have to be transferred from mixers, blenders and other process equip-

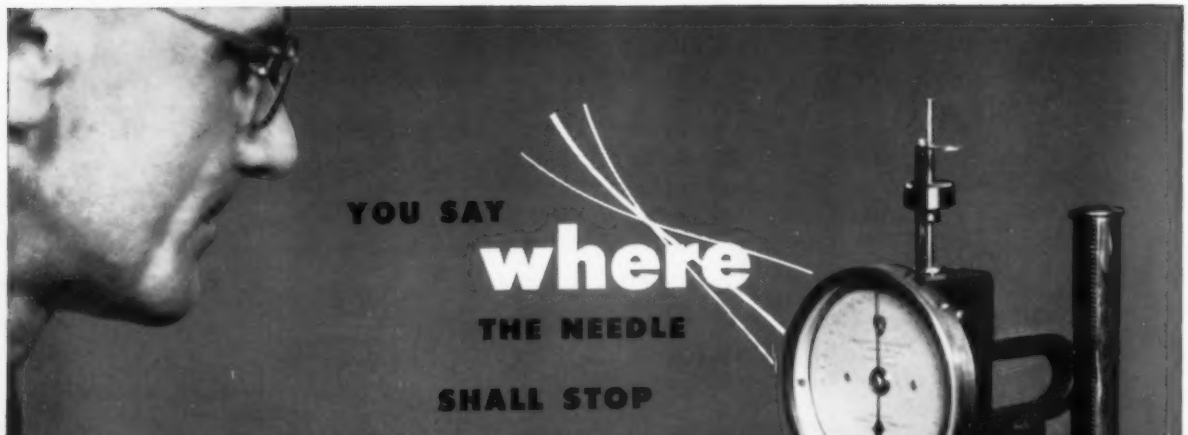
ment to the hoppers of filling and weighing machines to be packaged for shipment, this machine is useful.

OPERATION: Material is picked up by a suction nozzle and conveyed through a flexible hose to a receiver which is located above the machine hopper to be serviced.

A gate valve at the bottom of the receiver can either be manually opened and closed or be set for automatic operation. In the latter case material is fed into the machine hopper by gravity until the receiver is empty. The gate closes instantly when the conveying system is started.

Air which enters the receiver together with the material goes through a high efficiency cyclone head on top of the receiver. The solid material is thereby separated from the air and precipitated except a small percentage of fine particles which are carried with the air stream through a flexible hose to truck-mounted conveying equipment which includes an Airborne separator for the recovery of finest dust particles. Centrifugal action of the latter causes the fine particles to precipitate into a dust hopper under the separator while the air passes through separator, flexible hose, suction blower and a filter bag for final interceptance of any solids remaining in the stream.

The dust hopper when filled can easily be replaced by an empty one. For this purpose the separator, which normally rests on the dust hopper, to make an air-tight joint, is slightly raised by a handle and leverage system. Made by Powerad Co., 79 Madison Ave., N. Y. C. 16.



PENN-DRAKE® *Specialized* CUSTOMER SERVICE

If you require a petrolatum with distinctly different specifications . . . call on Penn-Drake Specialized Customer Service. Through this service we work with you in developing custom-made products.

So, for a whole range of properties—in white oils, petrolatums, petroleum sulfonates, solvents and similar products—it is you who dictates exactly what the various tests shall show. White oils with specific pour points and viscosities . . . petrolatums with unusual consistencies and specific melting points—these are typical of the distinctive products this service develops.

If you wish, Penn-Drake will assist you in writing specifications for your particular requirements. With 73 years of refining experience, Penn-Drake can provide the right specifications for the complete range of products indicated below.

PENNSYLVANIA REFINING COMPANY
GENERAL OFFICES: BUTLER, PENNSYLVANIA
Refinery at KARNS CITY, PENNSYLVANIA
Branches:* Cleveland, Ohio; Edgewater, N. J.** ***Representatives in Principal Cities

MAKERS OF: White Oils (U.S.P., N.F. and Technical); Petrolatums (all grades and colors); INSECTI-SOL (deodorized insecticide base); Deodorized and other Naphthas; Petroleum Sulfonates, Waxes; Industrial and Motor Lubricants and Greases; Fuel Oils, and other petroleum products.

penn drake products

Compounder's Corner

Anesthetic Lollypops

Various methods have been used to promote local anesthesia of the mouth and pharynx before bronchoscopy. However, methods in common use show certain disadvantages. Hence, B. G. B. Lucas, F. H. Newman and T. D. Whittet (*Lancet* 2:1146, 1951) sought a way to obviate the risks inherent in the usual procedures. As a result of their work, 30 mg. of the local anesthetic, amethocaine, has been made up in the form of a "lollypop" which is sucked by the patient. To prevent it being swallowed or inhaled it is firmly attached to a stick. The "lollypop" is made by heating to 154°C. granulated sugar, potassium acid tartrate, and water. To this is added amethocaine, lemon essence, and a coloring agent. The resulting mixture is poured into a starch mold. The following are the quantities necessary for the preparation of thirty "lollypops."

Granulated sugar	**150.0 Gm.**
Potassium acid tartrate	**0.5 Gm.**
Water	**50.0 cc.**
Amethocaine hydrochloride	**0.9 Gm.**
Solution of essence of lemon	**0.5 cc.**
Green color solution	**2.0 cc.**
Water	**5.0 cc.**

This preparation has been in use for some time and has been entirely successful.

Booklet on Emulsifiers

"Emulsifiers" is the title of an informative booklet just issued by Goldschmidt Chemical Corp., 153 Waverly Place, New York 14, N. Y. The publication presents considerable data on glyceryl monostearates and propylene glycol monostearates which the Goldschmidt organization pioneered in this country and which led to the creation of superior cosmetic and drug products. A variety of typical formulas are given to illustrate the use of these emulsifiers. In addition, information is given on the properties and uses of the Goldschmidt absorption base and the several preservatives and antioxidants made by the company. Copies of this useful booklet are available by writing the Goldschmidt Chemical Corp. and requesting the publication.

Cold Permanent Waving

Human hair, says W. W. Freund (*Australasian J. Pharm.* 32:944, 1951) is elastic, and can be stretched considerably, particularly when wet. Therefore all permanent waving processes are worked on wet hair. Either by hot or cold process strain is applied to one side of the hair shaft by winding it upon curlers of varying design. Within the last few years hot permanent waving has been greatly superseded by cold permanent waving.

The cold wave process consists of three steps: (1) the shampoo, (2) the application of the cold wave solution proper, (3) the neutralizing step. For the preliminary step any shampoo can be used.

The actual cold wave solutions contain compounds with an SH group, in alkaline solution. The earliest solutions contained ammonium hydrosulfide and free ammonia, and had a strong disagreeable smell of hydrogen sulfide. Organic compounds containing SH groups were then tried, and thioglycollic acid (mercaptoacetic acid) was found most suitable. Nearly all cold wave solutions contain thioglycollic acid in ammoniacal solution, but solutions containing thioglycollic acid and sodium hydroxide or organic bases such as triethanolamine have been marketed.

Solutions for home use usually contain about 4.5 per cent of thioglycollic acid, whereas solutions for use in beauty parlors contain higher concentrations, approximately 7 per cent, and their time of application is correspondingly shorter. Thus, a solution for home use might consist of:

Thioglycollic acid, 75%	**6.0 Gm.**
Stronger ammonia water	**6.0 cc.**
Wetting agent	**0.1 Gm.**
Distilled water, to make	**100.0 cc.**

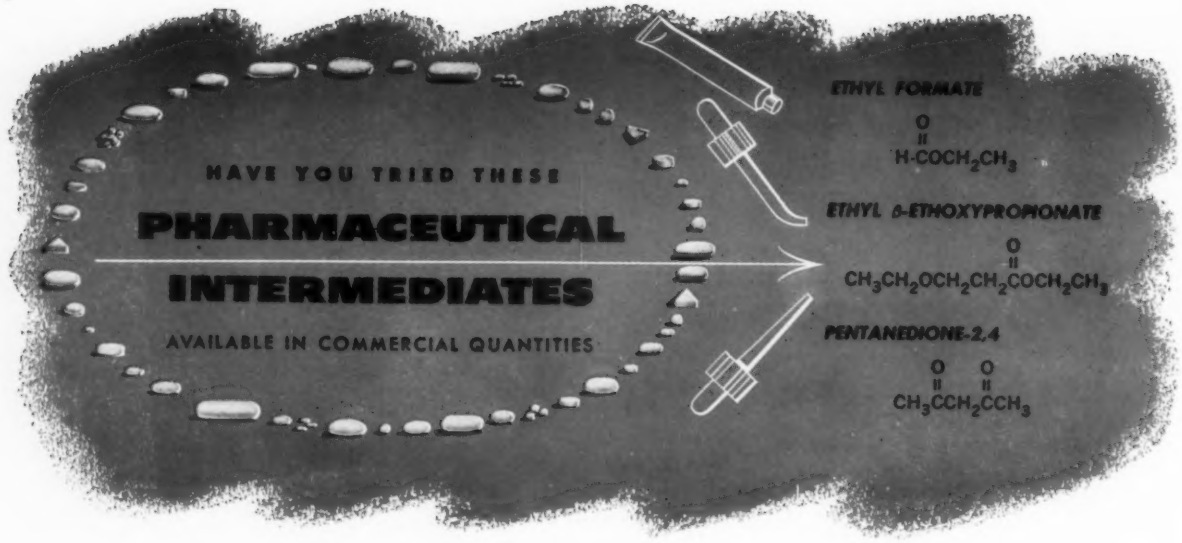
A solution for beauty parlor use might contain:

Thioglycollic acid, 75%	**9.3 Gm.**
Stronger ammonia water	**9.0 cc.**
Wetting agent	**0.1 Gm.**
Distilled water, to make	**100.0 cc.**

Because of the high pH, only a few wetting agents, such as Teepol X and Sulfatate B, are suitable. The pH of the solution is very important. It should be between 9.0 and 9.5, preferably 9.2. Solutions of a lower pH require longer periods of application or may become completely ineffective. At a higher pH they may damage or destroy the hair. Since the strength of the active ingredients may vary slightly and because some of the ammonia may be lost during manufacture, Freund advises that the pH of each lot of cold wave solution be checked.

He observes that thioglycollic acid is only moderately stable, and is oxidized by the air. Therefore the acid itself as well as the cold wave solutions must be stored in airtight containers, and during manufacture every care must be taken to reduce the exposure to air to a minimum and to exclude dust and other impurities. On account of such disadvantages several other organic compounds containing SH groups have been tried. One of these, thioglycerine (alphamonothioglycerol) was found to be superior to thioglycollic acid, as it has a slighter sulfidic odor, better stability and a greater waving power. However, manufacture of thioglycerine is complicated, and at present it is obtainable in laboratory quantities. When it will become easily obtainable it is to be expected that it will replace thioglycollic acid in cold wave solutions as well as in depilatories.

Many cold wave solutions are marketed as "Creme" waves. These are usually not emulsified lotions, but are made by adding to the cold wave solutions special opacifiers, which are concentrated solutions of resins or plastics. However, it is possible to manufacture emulsified "Creme" wave lotions, providing only small percentages of fats or waxes are used, as larger additions of fats and waxes reduce the waving power considerably. Lanette Wax SX as well as cetyl alcohol, in amounts from 0.3 to 0.5 per cent, are suitable.

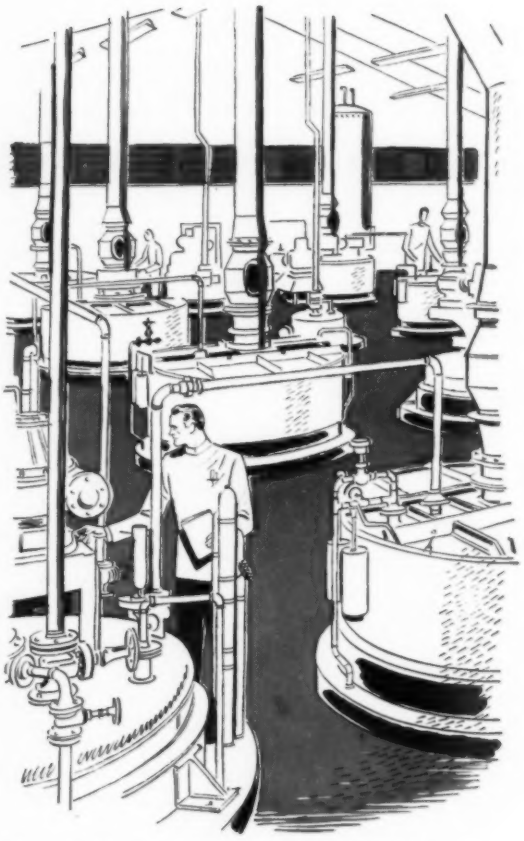


ETHYL FORMATE . . . intermediate in the synthesis of vitamin B_1, sulfadiazine, and sulfamerazine.

ETHYL β-ETHOXYPROPIONATE . . . important raw material for manufacture of vitamin B_1.

PENTANEDIONE-2,4 . . . raw material in the synthesis of 2-amino-4,6-dimethyl pyrimidine, an intermediate for making sulfamethazine.

These chemicals have many other potential uses as pharmaceutical intermediates. All three are available now in commercial quantities for your development or commercial production. For samples and further information, call or write us *today*.



You may be interested in testing these other CARBIDE intermediates and solvents for pharmaceuticals.

Acrolein—methionine and folic acid syntheses
Diethyl CARBITOL—inert reaction medium
Methyl Ethyl Pyridine—synthesis of nicotinic acid

CARBIDE AND CARBON CHEMICALS COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street New York 17, N. Y.
Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

The term "Carbitol" is a registered trade-mark of Union Carbide and Carbon Corporation

In manufacturing emulsified waving lotions it must be noted that solutions of thioglycollic acid must not be heated. Therefore emulsified lotions are prepared in the usual way from Lanette Wax SX or cetyl alcohol, distilled water, wetting agent; after cooling down completely thioglycollic acid and ammonia are added.

For the neutralizing step oxidizing solutions are used. Hydrogen peroxide with addition of an organic acid is suitable, as in the following example:

Solution hydrogen peroxide, 6%	**50 cc.**
Tartaric acid	**3 Gm.**
Distilled water, to make	**100 cc.**

Some cold wave kits, especially those for use in beauty parlors, contain solutions of organic acids in hydrogen peroxide 6 per cent, with the direction to dilute with an equal quantity of water before use. Most cold wave kits use solid neutralizers with directions for the preparation of the solution. The most widely used solid neutralizer is potassium bromate, packed in air-tight envelopes of cellophane or similar material; ¼ ounce to be dissolved in 16 ounces of warm water is adequate. As potassium bromate is poisonous if taken internally, appropriate warnings must be included in the directions.

Freund warns that thioglycollic acid in alkaline solution is absorbed by the skin, and can give severe cutaneous reactions. However, rigorous toxicity experiments conducted with cold wave solutions have shown that these diluted solutions as used in cold wave solutions are innocuous when used only every two or three months. There is no danger to anybody who gives herself a home permanent wave from time to time or who has a cold wave at a beauty parlor. However, persons regularly manufacturing cold wave solutions as well as operators in beauty parlors who handle cold wave solutions many times a week should always be protected by rubber gloves.

Preparations for Hyperhidrosis

A note in the *Practioner* (167:661, 1951) offers several suggestions for the treatment of persons suffering from profuse sweating of the hands and feet, particularly the feet. The most useful measure, it is stated, is perhaps daily bathing in a 10 per cent solution of sodium hexametaphosphate, and the use of a dusting powder such a one containing 5 per cent of sodium hexametaphosphate and 2 per cent of salicylic acid in a mixture of equal parts of zinc oxide, talcum and boric acid.

Preservative for Karaya Mucilage

A note in the *Perfumery and Essential Oil Record* (42:384, 1951) calls attention to the fact that, in concentration of 0.1 per cent sodium 4-chloro-*m*-methyl phenate is an effective preservative for gum karaya mucilages containing 1 per cent of the gum.

Quaternaries in Dentifrices

In their report in the *Journal of Dental Research* (30:558, 1951), H. M. Cobe and A. K. Leberknight state that quaternary ammonium compounds have been used as bactericidal and bacteriostatic agents in other fields and their incorporation into dentifrices has been an attempt to combine an antiseptic compound with the usual formulae. The incompatabilities in saliva and in the dentifrices themselves have produced many problems in manufacture, storage and use. The technics followed by Cobe and Leberknight were based on the total and lactobacillus counts. Two hundred students were used as subjects for clinical evaluation and pretest studies were used as controls. All subjects showed a deduction in the total bacteriological count at the end of five minutes. Reductions from the pretest bacterial count were less although obvious at the end of a half hour and at the end of three hours with dentifrices using quaternary compounds, a decided decrease was shown while with the control group using precipitated chalk and a stock paste, definite increases were shown.

Eye Drops

In discussing the use and abuse of eye drops A. McK Reid (*Practitioner* 168:90, 1952) states that the usual solvent for the various therapeutic agents is sterile distilled water, but normal saline is often used. Isotonic and buffered solutions, which maintain the drops isotonic with the tears and at a pH of 6.5 to 7.8 are desirable but add to the complexity and cost of dispensing. Chlorbutol may be added as a preservative, and it allays irritation. Castor oil may also be used as the solvent. The oily solution clings to the conjunctiva and is not easily washed away by the tears.

Reid warns against the use of stale drops. Eye drops kept too long may deteriorate, undergo chemical changes, or become moldy or infected and do more harm than good. He also warns against the over use of eye drops.

He notes that, as the winter season approaches, late nights and stuffy rooms with much smoking, and perhaps other conditions, may cause an individual to "greet the dawn" with gummy, bloodshot eyes. In such event, the world may be faced "with equinamity" if the following drops are instilled:

Sodium chloride	**0.4 Gm.**
Glycerine	**1.2 cc.**
Epinephrine (1:1000 solution)	**1.2 cc.**
Solution of hamamelis	**1.8 cc.**
Water, to make	**28.5 cc.**

Information on Hormone Cosmetics

Mann Fine Chemicals, Inc. has published a paper on the use of estrone, natural and synthetic, in hormone cosmetic preparations. Advantages of the use of pure estrone are explained, also details are given for the making of creams etc., including a suitable base. Copies will be mailed upon request. to the company at 136 Liberty St., New York 6, N. Y.

Deodorants from Europe

Some interesting deodorant formulas, originally published in *Seifen, Oele, Fette und Wachse*, are cited in the British journal, *The Perfumery and Essential Oil Record* (43:312, 1951). Thus a deodorizing talcum may be made from:

Talcum	**34.0 parts**
Sodium bicarbonate	**20.0 "**
Magnesium oxide	**5.0 "**
Rice starch	**1.0 part**
Lavender oil	**0.2 "**

A formula for an underarm deoderant calls for the use of:

Glycerol monostearate	**15.0 parts**
Titanium dioxide	**1.0 part**
Petrolatum	**3.0 parts**
Beeswax	**2.0 "**
Formaldehyde-40%	**1.0 part**
Water	**78.0 parts**

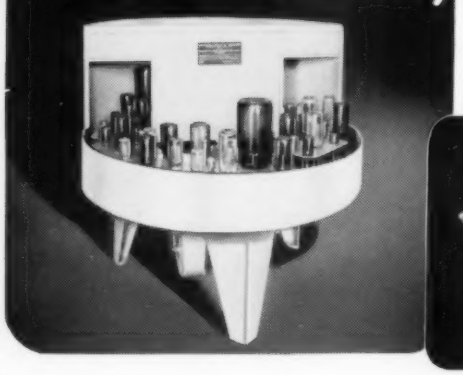
Notworthy too is the following combination for making deoderizing wax pencils:

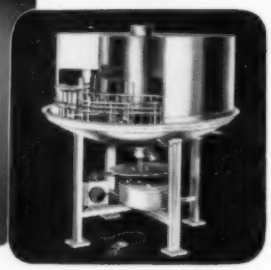
Paraffin, hard	**12.0 parts**
Cetyl alcohol	**3.0 "**
Paraffin, soft	**23.5 "**
Beeswax	**21.0 "**
Mineral oil	**32.0 "**
***Hexa*methylene tetramine**	**6.5 "**
Perfume	**1.0 part**

Bottle Rinsing and Cleaning Machines

THE U.S. ROTARY RINSER AND CLEANER

For Any Size or Shape of Bottle or Jug





THE U.S. AMPOULE RINSER

For Ampoules, Vials and Serum Bottles. All sizes. Adaptable to thermal shock treatment or any desired method of cleansing. Has important advantages.

A power driven machine. Illustration shows the wide range of containers it handles. Note how bottles rest on shoulders rather than necks, this eliminates neck chipping and breakage. Machine revolves in either direction. Easy to load and unload. Will rinse insides only or *both* insides and outsides. Can use cold water, hot water or steam. Detergents can be used. Machine can be adjusted also for blowing out containers by using air.

On all U. S. rinsers and air cleaners, containers are completely inverted for cleansing and complete evacuation of all foreign matter is positive. Five outstanding U. S. container cleansing machines enables us to recommend the most efficient equipment for any production schedule or requirement. Write us, stating your container rinsing or air cleaning needs or write for Bulletins.

U. S. BOTTLERS MACHINERY CO., 4013 N. ROCKWELL ST., CHICAGO 18, ILL.

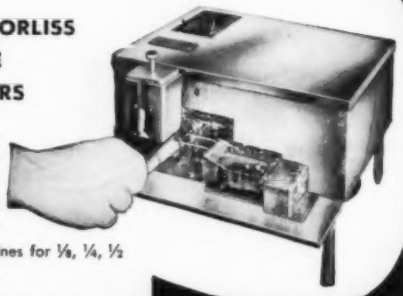
OFFICES: Boston, New York, Philadelphia, Houston, Dallas, Denver, San Francisco, Los Angeles, Seattle, Portland, Phoenix, New Orleans, Tampa. Montreal, Toronto, Vancouver, Winnepeg. EXPORT OFFICE: Toledo, Ohio.

POTDEVIN

. . . the greatest name in
COST-CUTTING PACKAGING MACHINES
Since 1893

60 years of dependable service

New!
POTDEVIN-CORLISS COLLAPSIBLE TUBE LABELERS



Applies 32 slip labels per minute to collapsible tubes. Automatically forms label and ejects it on the tube. Machines for ⅛, ¼, ½ and 1 ounce tubes.

Are you having trouble with your short-run labeling jobs? Get a POTDEVIN LABEL PASTER today. Models for 6, 8½, 12 and 18 inch labels, hand and motor driven. Semi-automatic feeds, too. Try a POTDEVIN on a FREE 10 day TRIAL.

Write for literature

Visit our Booth No. 460 at the National Packaging Show

POTDEVIN MACHINE CO.
257 North Street
Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

MOULDS

LIPSTICK • SANITARY LIPSTICK
• STYPTIC PENCILS •
SUPPOSITORIES • MASCARA

PROGRESSIVE LABELING MACHINE, Inc.
137 West 22nd St., New York 11, N. Y.

ROUGE • COMPACT POWDER
also
PUNCHES FOR TABLETS

DIES

BOOKS:

As a convenience to our subscribers we offer the books of all publishers—technical and non-technical—at the regular published price—postage paid anywhere.

Consult our BOOK DEPARTMENT -- direct your inquiries to

Book Department
Drug & Cosmetic Industry
101 West 31st St., New York 1, N. Y.
LOngacre 3-3177

Industry's Books

Pharmacopoeia Internationalis, First Ed., Vol. I, 406 pp., Columbia University Press, New York, $5. (Available also in French and Spanish Editions).

Volume I of the Pharmacopoeia Internationalis—the first international pharmacopoeia—has just been published by the World Health Organization. The appearance of this work, marking as it does a major advance towards the international unification of the terminology, strengths, and composition of pharmaceutical substances—is of historic significance. This work is similar in form to the present-day national pharmacopoeias. Volume I, in addition to 199 monographs giving specifications for drugs and preparations, including certain of the newer substances such as antitoxic sera and the sulfa drugs, contains 43 appendices—in which reagents, test solutions, solutions used for volumetric analysis, weights, and measures are defined; biological assays, determinations of potency, and limit tests for various metals and salts are described; the international atomic weights of elements mentioned in the volume are listed, and the usual and maximal doses of drugs for adults are tabulated—and a section, entitled "General Notices," in which descriptive terms used for solubilities and containers are defined; and general observations on nomenclature, galenicals, molecular weights, interpretation of figures, chemical and graphic formulae, assays, etc. are given. The Pharmacopoeia Internationalis should be particularly useful to all countries whose national pharmacopoeias need revision.

Quaternary Ammonium Compounds In Chemical Sterilization, by J. C. L. Resuggan, F.R.I.C., Chief Chemist, The British Hydrological Corporation, 120 pp., United Trade Press, Ltd., London, 15/s.

The author here presents the essential facts about the properties and uses of the quaternary ammonium germicides to the wide range of people interested in them. This includes not only chemists and bacteriologists working in the food industries, to whom certain chapters are more specifically directed, but also executives and process department managers in food and beverage plants. Contents: Part I Physics, Chemistry and Bacteriology—II Physical Properties of Surface-Active Compounds Generally—III Anti-Bacterial Activity and Toxicity—IV Chemistry—V The Bacteriological Testing of Quaternary Ammonium Compounds. Part II—Applications in the Food and Beverage Industries—VI The Dairy and Ice Cream Industries—VII Brewing, Soft Drink and Allied Industries—VIII Catering Industry—IX Uses in Other Food Industries.

A Textbook of Pharmacology and Therapeutics, by Harold N. Wright, M. S., Ph.D., Professor of Pharmacology, University of Minnesota, and Mildred Montag, Ed.D., R. N., Assistant Professor of Nursing Education, Teachers College, Columbia University, Fifth Ed., Illus., 620 pp., W. B. Saunders Co., Phila.

Rapid strides continue to be made in the field of pharmacology and therapeutics. The most important advances of the past three years have been incorporated in this edition. Among the more important developments may be mentioned the antihistaminic drugs and ganglionic blocking agents. In this edition the autonomic drugs have been divided into three separate chapters, with the oxytocics in an additional chapter. Numerous autonomic drugs have been added, including methacholine chloride, methamphetamine hydrochloride, di-isopropyl fluorophosphate, nicotine and tetraethylammonium bromide. The official names of drugs used in this edition have been brought into conformity with the fourteenth edition of the United States Pharmacopoeia and the Ninth Edition of the National Formulary. The numerous changes in names of drugs made by New and Non-Official Remedies, especially in the groups of barbiturates, local anesthetics, antihistaminics and topical antiseptics have also been incorporated. With the increasing importance of antibiotic therapy, greater prominence has been given to its consideration in the chapters on bacterial diseases and syphilis therapy. The information has been expanded and a discussion of newer antibiotics added.

Statistical Methods for Chemists, by W. J. Youden, National Bureau of Standards, 126 pp., John Wiley & Sons, Inc., New York, $3.

This book is written for those who make measurements and interpret experiments. Characterized by an absence of statistical theory and proofs, this work makes available to the scientist the modern statistical system of units for expressing scientific conclusions. The author's 20 years' experience in experimentation has led him to write from the laboratory man's point of view. The statistical techniques in this book are those which the author found most useful in a wide variety of scientific investigations. Dr. Youden combines the modern concept of experimental design with the associated techniques for the interpretation of data, using examples based on actual data from real investigations.

Materials Technology For Electron Tubes, by Walter H. Kohl, Consultant to the Director of Research, Collins Radio Co., Cedar Rapids, 493 pp., Reinhold Publishing Corp., New York, $10.

This book presents up-to-date information on materials used in the construction of electron tubes. The treatment of materials such as glass, ceramics, mica, tungsten, molybdenum, tantalum, copper, nickel, graphite is one feature of the book. Each chapter dealing with these metals contains an extensive tabulation of the physical characteristics and the chemical reactions taking place with various reagents. The description of processes used for the application of these materials is another feature. Included is a critical review of the work done throughout the world by many research workers. Certain data and description of processes are published here for the first time. There is a review of atomic theory and the classification of crystals which provides a welcome introduction to the novice in this field.

Quickly, she'll narrow it down to one!

Creature of whim? Well, maybe so. But *she knows what she wants.* A little help from you, and she'll narrow it down to one—YOURS! This calls for imaginative creations apart from the ordinary—such creations as can be blended from Penick's wide stocks of Perfume Bases of outstanding fragrance.

The art of combining fragrance has been developed to the highest degree in the Penick Laboratories, staffed with specialists in creating floral odors true to the natural flower. These men are artists in the skillful blending of oils, aromatics and fixatives to produce unusual Perfume Bases.

We shall be glad to consult with you on your individual problems, or to assist you in the development of special compounds for new and exclusive personalized creations.

Perfume Bases for perfumes of all types, colognes, soaps, cosmetics for women and men, and masking agents for industrial use. Samples are available. Write Dept. DC-3.

S. B. PENICK & COMPANY

50 Church Street, New York 7, N. Y.
Telephone COrtlandt 7-1970

735 West Division Street, Chicago 10, Ill.
Telephone MOhawk 4-5651

DISTILLERS OF RARE AND QUALITY ESSENTIAL OILS—MANUFACTURERS OF AROMATIC CHEMICALS

Readers' Questions

HEADACHE COLOGNES: If you can find a formula for a so-called headache cologne, I would appreciate same. Some years back, products of this sort were quite popular. Perhaps you can make a suggestion as to a formula that is more modern. Dubuque.

More modern preparations of this sort probably could be made with newer perfume mixtures such as are formulated by perfume manufacturers like those who advertise in our publication. From a check of the literature, one of the simplest of so-called headache colognes consists of:

Menthol	**40 Gm.**
Perfumed spirit, to make	**1000 cc.**

Another somewhat more elaborate preparation calls for the use of:

Menthol	**4 dr.**
Camphor	**1 oz.**
Eau de cologne	**128 oz.**

Another, containing a more varied odor mixture, calls for the use of:

Menthol	**480 gr.**
Oil of bergamot	**10 drops**
Oil of lavender	**20 drops**
Oil of lemon	**8 drops**
Oil of cassia	**2 drops**
Spirit of camphor, to make	**4 oz.**

LIQUID DRY SHAMPOO: We would appreciate a suggested formula for a liquid dry shampoo for hospital use. Any information you can give will be appreciated. Pittsburgh.

At first I was puzzled by your request, but I decided I would make a check of the available information. According to the British authority, R. G. Harry, liquid dry shampoos are simple solutions of soap in denatured alcohol or isopropyl alcohol. After use, the hair dries rapidly during the evaporation of the alcohol, hence the term "liquid" dry shampoo. He says that such products when properly applied are efficient in removing grease from the hair and in rendering it temporarily sterile, and also provide a stimulating friction lotion.

In the possibility that you may also be interested in a standard type of dry shampoo, Harry also provides a formula for a product of this sort, as follows:

Borax	**6.6 per cent**
Sodium sesquicarbonate	**16.5 " "**
Fuller's earth	**16.5 " "**
Talc	**60.4 " "**
Perfume	**sufficient**

INDELIBLE LIPSTICK COLOR: We have noticed that there is much interest in America in "a non-drying indelible lipstick". As we are very much interested in such a product, we will be glad to hear from you concerning the color in question. Upsala.

The color used in preparing the lipstick under discussion is tetrachloro-tetrabromo fluorescein. This high-staining dye is officially known in the United States as F.D.&C. Red No. 27.

ANTI-SOLVENT EMOLLIENT: I would appreciate any information you can give me regarding the compounding of a liquid or cream formula suitable for use on the hands to restore the oils lost in handling acetone and similar solvents. New York City.

A suitable emollient for this purpose has been described as consisting of equal parts of lanolin and cold cream. You might also try the following simple combination which comes well recommended:

Lanolin, anhydrous	**70 parts**
Castor oil	**30 "**
Perfume	**1 part**

DEODORANT CREAM: Could you give us a formula for a cream deodorant comparable to "Blank" cream deodorant? Hollywood.

As you may know, it is contrary to our policy to divulge the composition of any "brand" product, even when available. However, a typical formula for a deodorant cream meeting modern requirements is as follows:

A.	
Sorbitan sesquioleate	**4.22 per cent**
Ceresin wax	**6.35 " "**
Petrolatum	**8.45 " "**
Mineral oil 65/75	**19.00 " "**
Lanolin (Anhyd.)	**4.23 " "**
B.	
Magnesium sulfate	**0.13 " "**
Water	**22.62 " "**
Preservative	**sufficient**
C.	
Zinc oxide	**15.00 per cent**
Zinc stearate	**10.00 " "**
Aluminum sulfocarbolate	**10.00 " "**
D.	
Perfume	**sufficient**

Melt (A) at 70°C. Add (B) to (A) at 75°C., with agitation. Cool to 60°C., and add (C). Perfume at 50°C., and pack at 40°C.

Animal Health

New Calf Starter

According to K. E. Gardner, a new, low-cost, simplified calf starter suitable for farm mixing has been giving excellent results with about 60 calves in tests at the Illinois College of Agriculture. The starter includes 50 per cent ground yellow corn, 20 per cent ground or crushed oats, 27 per cent soybean oil meal, 1 per cent salt, 1-½ per cent steamed bone meal, and 2/10ths of 1 per cent of a dry, powdered vitamin A and D supplement. The dry vitamin supplement provides 4,000 units of vitamin A and 800 of vitamin D in each pound of starter. The powder is easy to mix into the starter with the other ingredients.

The average growth rates were above normal and compared closely with 20 control calves receiving a starter containing dried skim milk and a wide variety of other feeds. The calves first received the starter at two weeks of age and were carried to four months of age. They received it free choice up to 4-½ pounds daily, with good-quality alfalfa hay free choice. Gardner points out that the calves were limited to a total of about 350 pounds of whole milk fed over an 8- to 10-week period. By cutting down on whole milk, the cost of calf feed is reduced greatly.

Intravenous Formalin as a Hemostatic in Dogs

A study on the influence of formalin as a hemostatic agent in dogs has been made by A. C. Gonzaga and A. R. Gabuten (*Indian. Vet. J.* 27:411, 1951). In their investigations, blood from 20 apparently healthy native dogs showed an average coagulation time of two and a half minutes. Fifteen minutes after the intravenous administration of 5 per cent formalin in distilled water at a dosage of 1 cc. per kg. bodyweight the clotting time fell to an average of 23.5 seconds, slowly rising thereafter to pre-injection level in three to four hours. As used in this study, formalin was found to produce no permanent ill after-effects. Gonzaga and Gabuten feel that the data obtained in their work points to formalin as an effective hemostatic agent.

Terramycin for Calf Scours

In reporting on the potentialities of terramycin in the treatment of calf scours or white scours (dysenteria neonatorum), H. Kafka (*N. Am. Vet.* 32:826, 1951) presents a short history of our outbreak of the disease on three dairy farms. During this outbreak terramycin, given orally in capsules, proved highly successful, both in the treatment of sick calves and as a prophylactic measure. The doses were as follows: For treatment, 200 mg. of terramycin orally each day for three days; for prophylaxis, 100 to 200 mg. once, before or with the first or second feeding.

Antibiotics and Poult Growth

In a study of the comparative effect of antibiotics on the growth of poults, H. D. Branion and D. C. Hill (*Poultry Sci.* 30:793, 1951) found that aureomycin hydrochloride, penicillin G potassium, terramycin hydrochloride and streptomycin sulfate, when added at a level of 25 milligrams per kilogram of a diet containing 15 per cent animal protein supplements or an all plant protein diet supplemented with crystalline vitamin B_{12}, resulted in a growth response in turkey poults to 8 weeks of age. Feed efficiency was improved on the all plant protein diet but not with the animal protein diet by the addition of the antibiotic. The relative ability of these antibiotics to stimulate growth was not the same from 0 to 4 weeks as from 4 to 8 weeks. Chloromycetin (chloramphenicol), at the same level as the other antibiotics did not improve growth or feed efficiency with either diet.

The addition of crystalline vitamin B_{12} to the all plant diet improved growth and feed efficiency.

Of interest in connection with this last statement are the findings of D. H Sherwood and G. M. Briggs (*Poultry Sci.* 30:902, 1951). Their data show that, with a corn-soybean type diet, Broad Breasted Bronze turkeys require vitamin B_{12} in the ration for the maximum growth. This is true whether or not the ration contains antibiotics. Females give much less response to B_{12} than males, whereas in chickens both females and males respond equally to B_{12}. Indications are that the optimum level is between two and ten mcg./kg. of ration, but this point requires further investigation.

Improved Corn-Tankage Ration

Purdue University animal nutritionists have found that B-vitamins and antibiotics supply at least part of the missing link in the balancing of a corn and tankage ration for growing and fattening pigs. They point out that meat by-products have always played an important role in supplying many of the nutritional deficiencies that exist in corn, but even the addition of alfalfa meal, minerals and vitamins A and D does not provide a complete balance.

Research has been started by W. M. Beeson, T. W. Perry and J. N. Henson, of the animal husbandry department, to determine one by one all of the nutritional factors still needed. Preliminary tests conducted with 30 Duroc pigs showed conclusively that a corn-tankage diet can be improved by addition of certain B-vitamins and an antibiotic. However, the tests did not establish which one or more of the nutritional factors are essential to improve the nutritive value of tankage.

Addition of the three B-vitamins—riboflavin, calcium pantothenate and niacin—to a corn-tankage ration increased the daily gain of the pigs from 0.99 to 1.25 pounds but did not change appreciably the feed requirement pre unit of gain. Fortifying the same ration with the three B-vitamins plus vitamin B_{12} and terramycin increased the growth rate to 1.61 pounds daily and improved the feed efficiency when the difference in liveweight of the hogs is considered.

The 30 pigs averaged 33 pounds at the start of the trial. They were divided into three equal lots and were self-fed continuously in concrete pens. All lots received free choice shelled corn and a mineral mixture consisting of steamed bonemeal, ground limestone and salt. In addition, lot 1 was fed basal supplement A consisting of 90 per cent tankage and 10 per cent alfalfa meal. Lot 2 received the same supplement plus 5.6 mg. riboflavin, 31.5 mg. calcium pantothenate, and

35.0 mg. niacin per pound. For lot 3, two per cent of the tankage in the second ration was replaced by a terramycin-B_{12} supplement. Each pig in lot 1 ate an average of 2.91 pounds of feed daily; those in lot 2 ate 3.95 pounds daily; and lot 3 pigs ate 4.66 pounds per day. The first lot of pigs consumed 294 pounds of feed per 100 pounds of grain; the second used 316 pounds of feed for a similar gain; and the third needed only 291 pounds of feed for a 100-pound gain. Average weights at the end of 70 days for the three lots were 108, 122 and 145 pounds, respectively.

Antihistamine for Snake Bite in Dogs

Snake bite, says H. K. Maier (*Vet. Med.* 46:463, 1951) although not a problem in every section of the country, is of much concern in the South, Southwest and West. Numerous medicaments such as antivenom serum and potassium permanganate have been used in its treatment. His report on the use of diphenhydramine hydrochloride (Benadryl Hydrochloride) suggests the value of this antihistaminic agent in the treatment of snake bite in dogs. He found that 1 to 2cc. of Benadryl Hydrochloride solution (10 to 20 mg. Benadryl) intravenously, as available in Steri-Vial Benadryl, was a satisfactory therapeutic agent in treatment of three dogs bitten by poisonous snakes. Two dogs, struck by ground rattlesnakes were also given one 25 mg. Kapseal Benadryl hourly by mouth for six hours. Recovery in all cases was complete and dramatic.

Sulfaquinoxaline for Fowl Cholera

In their report in *Veterinary Medicine* (47:28, 1952), A. M. Campbell, D. F. Eveleth and A. I. Goldsby state that sulfaquinoxaline has been found to be a highly effective drug in the treatment of fowl cholera. Data presented in their paper show that a high level of serum sulfaquinoxaline can be established by the intramuscular injection of sodium sulfaquinoxaline. The simultaneous feeding of a mash containing 0.025 per cent sulfaquinoxaline will maintain a serum level that has been found effective in preventing losses due to fowl cholera.

Hyaluronidase incorporated in a sodium sulfaquinoxaline solution did not increase the rate of absorption of the sulfaquinoxaline solution when it was injected intramuscularly into chickens.

They found that the storage of sulfaquinoxaline in the livers and kidneys of chickens is not great. The problem of human poisoning from eating chickens medicated with sulfaquinoxaline appears to be unimportant since poultrymen would not be likely to feed rations containing more than 0.05 per cent except possibly for a limited length of time. The chickens fed mash containing 5 per cent sulfaquinoxaline for seven days did not show any evidence of poisoning. There was, however, a slight decrease in the amount of feed consumed.

Antibiotics vs Vibrio Fetus

Infection of sheep and cattle with *Vibrio fetus* is recognized as a major cause of sterility and abortion. However, there has been little reported concerning the therapy of the disease. To remedy this situation, J. E. Prier (*Vet. Med.* 46:358, 1951) has made a series of preliminary studies on the *in vitro* senstitivity of four strains of *Vibrio fetus* to seven antibiotics. Aureomycin, penicillin, streptomycin, neomycin, bacitracin, chloromycetin, and terramycin were used. Terramycin, neomycin, and chloromycetin were more active against the organisms than were the other antibiotics used. Both tube dilution and plate dilution methods were employed.

Thiopentone Anesthesia in Larger Animals

Soluble thiopentone B.P. is widely used as a short-acting general anesthetic in small-animal surgery. It is usually administered by slow intravenous injection over a period of three to five minutes and the depth of anesthesia assessed as the injection proceeds. Anesthesia of ten to 15 minutes is generally obtained, recovery is free from excitement and usually complete in about two hours. Owing to the cost of the amount of drug needed to anesthetize larger animals the method has been restricted in general practice to the cat and dog.

However, says E. J. H. Ford (*Vet. Rec.* 63:636, 1951) when thiopentone is administered to horses and cattle by rapid intravenous injection the dose required is less than that required by the slow intravenous route and the cost is correspondingly lower. It is necessary to administer the calculated dose by an exact technique for the advantage of reduced cost is lost when it becomes necessary to give additional doses to obtain anesthesia. Even when the calculated dose is accurately administered the attainment of a state of anesthesia is not certain. It is, of course, possible to superimpose another anesthetic such as intravenous chloral, intravenous ether or chloroform, but this adds to the cost as well as the number of manipulations to be carried out.

In his work thiopentone was administered by the rapid intravenous technique to horses on eight occasions and to cattle on 24. Short periods of anesthesia were attained on seven occasions in horses and on eleven occasions in cattle. Thirteen operations were carried out and one death occurred. Thus, while anesthetized by thiopentone two horses have been castrated, ten cattle dehorned and one underwent a nose operation.

Preventing Swayback in Lambs

In a report in *Nature* (168:728, 1951), Dunlap points out that for a number of years local farmers have reported to the Animal Husbandry Department of the West of Scotland Agricultural College the appearance during March and April of symptoms of swayback disease among their flocks, soon after the beginning of the lambing season. This has usually indicated that numerous cases of the disease will occur among the lambs yet to be born. After experiments over a number of years the practice has now been adopted of treating all suspect ewes with copper either one week before lambing or immediately after the disease has been observed among the lambs. Medication in the form of 1 Gm. of copper sulfate dissolved in 30 cc. of water is administered to each ewe. After more than 4,000 susceptible ewes have been treated in this way no occurrence of swayback among the progeny has been reported.

Hormones and Dairy Cow Productivity

According to a note in *Chemical Week* for January 26, 1952, more milk and possibly more calves may result from current studies at Michigan State College. Researchers at the College have been probing the effect of progesterone and diethyl stilbestrol implants on unproductive dairy cows. Although much work remains before their findings can be translated to practical farm use, some interesting results now are available. Two sterile Guernsey heifers were given the hormone treatment. Without calving, both produced over 6,000 pounds of milk and 320 pounds of butter fat over a 300-day period—equaling the performance of normal first-calf heifers of the breed. Milk production also was reinitiated in two 4-year-old non-breeders which ordinarily would have gone to the butcher.

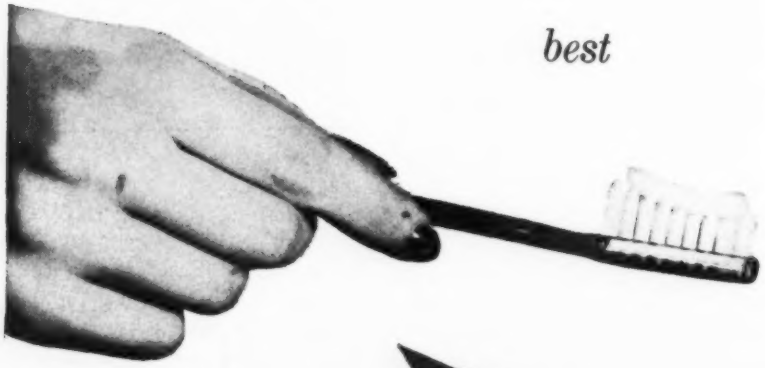
such

trust

deserves

the

best



The dentifrice manufacturer enjoys a special trust that his customers place in his product. To remain faithful to that trust his product must be made of only the finest ingredients. Sturge Precipitated Calcium Carbonate U.S.P. is such a product. Its capacity to form stable dispersions in glycerine-water mixtures, its mild and controllable detergent action on teeth and, above all, its chemical inertness and physical harmlessness to tooth surfaces make Sturge P.C.C. a necessary raw material for the finest tooth pastes and powders. The producer, John & E. Sturge, Ltd., of Birmingham, England, will meet your special density requirements. Write today on your company letterhead for a sample and further information.

specify

STURGE PRECIPITATED CALCIUM CARBONATE

for Dentifrice & Cosmetics · Paper-making & Coating · Paints & Distempers · Rubber & Plastics Drugs · Fermentation Processes · Printing Inks

SOLE DISTRIBUTOR:

H. J. BAKER & BRO. 600 FIFTH AVENUE NEW YORK 20, NEW YORK

Patent Thoughts and Trends

by Thomas Cifelli, Jr.†
PATENT ATTORNEY

PATENT POINTERS—I

Introduction

We saw last month that the Drug and and Cosmetic Industries did not rate very highly from the point of view of patent activity when compared with companies operating in other fields. While this may affect the pride of some in our two industries, it is felt that this situation should be accepted as a challenge to do better. With this thought in mind the writer has asked himself what he can do to aid, in a practical, tangible manner.

After considerable thought on the matter, it has occurred to me that perhaps the best contribution I can make is to give the reader some practical suggestions and observations from A to Z, that is to say, from the conception of an idea right on through to its protection and enforcement of any patent rights which are obtained.

Obviously, the purpose here is not to give either an intensive or extensive treatment of patent law. Instead, the objective is to try to aid the reader in his primary function as a drug or cosmetic worker by furnishing him with patent information which, it is hoped, will be helpful to him. Better cooperation between the inventor and the patent attorney should result and in the end this should mean that the maximum protection available on any invention that the reader may make or be interested in can be obtained with a minimum amount of cost.

To facilitate matters the patent topics will be discussed in the order in which they are likely to come up in point of time. Thus, we shall consider first what the drug or cosmetic worker should do even before an invention is made; then what should be done while an invention is being worked out; and finally we shall take up those patent considerations applying after an invention has been perfected.

It will be appreciated that the scope of this undertaking is such that it cannot be presented fully in this article. Perhaps that is a blessing in disguise as otherwise there might be too much to attempt to digest at one sitting.

It will be found that some of the pointers mentioned in the present series have already been touched upon in previous articles. However, it is felt that by putting the various pieces together in a coherent manner they should be more helpful, just as jigsaw pieces mean more when they have all been assembled.

Records

Perhaps the most important single thing that anyone who is engaged in improving processes, developing new products, or finding new uses for materials can do is to keep proper records. That may sound elementary and unnecessary but it is a fact that there are a great many disgruntled inventors who believe that they are true inventors even though the Patent Office or the courts may have held otherwise. Upon investigation it will usually be found that the successful party kept records in proper form and the unsuccessful party either kept no records at all or his records were not adequate for patent purposes.

In order to be helpful, the records preferably should be in ink in a permanently bound note-book and should contain all of the details necessary to an understanding of what was done. Each page should be signed in the handwriting of the person who did the work, numbered and dated. The record then should be examined by someone capable of understanding the subject matter of the invention and that party should then state that he has read and understood the contents of the record and then sign his name and write the date. The names of any persons present during the operations should be recorded. Statements that the experiment was unsuccessful should be avoided, not to hide the fact, but because such statements are often misleading as they might not apply to an aspect which may later become the subject of a patent controversy. The materials used should be identified chemically, even where trade names are employed, as the composition of products sold under trade names is subject to change.

Diligence

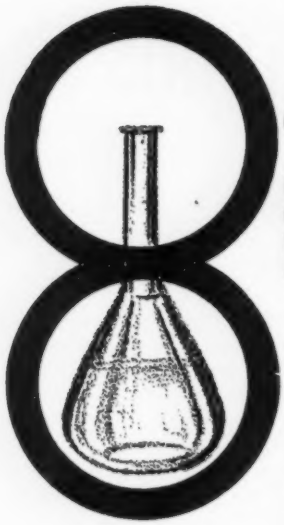
But even that is not enough. For, since drug and cosmetic problems, by their very nature, normally involve a series of experiments until the problem is solved one should exercise diligence in working out the problem. That is to say, a reasonable number of experiments should be performed during the course of the investigation, as otherwise the earlier work might be considered as abandoned experiments and not entitled to any consideration.

It would be fine if a definition of diligence could be given but the fact of the matter is that what may be diligence in one case may not be in another. So the thing to do is not to "table" the work but to keep working on the problem.

Reduction to Practice

Truth to tell, it is not enough in the event of a dispute in the Patent Office between two or more inventors claiming the same invention to keep the records as aforesaid and to be diligent in completing the invention. It is also necessary to reduce the invention to practice. This may be a constructive reduction, as by filing a patent application, or it may be an actual reduction. A very harshly-applied rule of corroboration requires that there must be independent corroboration of all of the essential factors concerned in reducing the invention to practice. As applied in drug and cosmetic cases, this rule of corroboration seemingly imposes the duty upon the corroborating witness to see each and every essential step in the process, and in the case of new products the witness should have first hand knowledge of the tests applied to the new products in order to establish their utility. Because of this corroboration rule as repeatedly applied by the Patent Office and patent courts it is the practice of some to file patent applications even

†Gaylor, Cifelli & Jurick, Newark, N. J.



8 Reasons Why PLYMOUTH
ZINC STEARATE U. S. P.
IS BEST FOR DRUGS AND COSMETICS

1. Backed by the longest commercial Stearate manufacturing experience in America . . . M. W. Parsons offers you this new product as the finest Zinc Stearat that can be made.

2. Years of Research have made possible a particularly white product.

3. Special production methods . . developed over more than a quarter of a century . . have made it ODORLESS.

4. It will not develop offensive odors even if kept for a long period.

5. It enables your face powder to retain the same odor that you give it.

6. A smooth, light, fluffy texture has been finally and definitely achieved.

7. Tested independently it shows the following results: ARSENIC (Gutzeit and Spectrographic Test) . . Not Found. LEAD. (Spectrographic Determination) . . . 1.7 parts per million.

8. The reputation and record of M. W. Parsons assure you of Uniformity in all shipments.

We also manufacture a superlative grade of PLYMOUTH MAGNESIUM STEARATE

M. W. PARSONS - PLYMOUTH, INC.

59 BEEKMAN STREET
NEW YORK, N. Y., U. S. A.

Telephone BEEKMAN 3-3162—3163—3164
Cable Address: PARSONOILS, NEW YORK

CUT PACKAGING TIME...
WITH THIS
FASTER BAGGER

The Anderson Bagger, Model 134, is designed to handle bagged products at a fast rate with a minimum of effort. Simple adjustments for height and tilting forward or backward enables the operator to set the machine at the most advantageous position. He can fill the bag and place it in the carton in one operation. The stainless steel bag trough, capacity 200 bags, may be loaded from front or back. Simple adjustments for bag sizes.

Blower, equipped with air filter, opens bag and keeps it free from foreign matter.

Send Today for Bulletin No. 3-24

Anderson BROS. MFG. CO.

ANDERSON BROS. MFG. CO.
ROCKFORD, ILLINOIS

Old Empire

Contract Manufacturing

QUALITY CONTROL SERVICE

- SHAMPOOS (LIQUID AND CREAMS)
- LOTIONS
- CREAMS
- ALCOHOLIC PREPARATIONS

AUTOMATIC EQUIPMENT HANDLING

Any volume Production on Bottles, Jars and Collapsible Tubes.
Samples and Quotations with Pleasure

OLD EMPIRE MFG. CHEMISTS, INC.
31-33 COES PLACE • NEWARK 2, N. J.

though the invention has not been worked out, in order to get a constructive reduction to practice which is sufficient to establish the date of invention for patent purposes.

What Is Invention?

Before discussing the procedure to take after an invention has been made, it might be advisable to consider the definition of an invention. Frankly, there is no such thing. The U. S. Supreme Court has frequently refused to give any definition of invention, saying in one case:

"The truth is the word cannot be defined in such manner as to afford any substantial aid in determining whether a particular device involved an exercise of the inventive faculty or not. In a given case we may be able to say that there is present invention of a very high order. In another we can see that there is lacking that inpalpable something which distinguishes invention from simple mechanical skill. Courts adopting fixed principles as a guide, have by a process of exclusion determined that certain variations in old devices do or do not involve invention; but whether the variation relied upon in a particular case is anything more than ordinary mechanical skill is a question which cannot be answered by applying the test of any general definition."

A few years ago a commission appointed by the late President Roosevelt to make a thorough study of the patent system recommended that Congress enact a definition of invention. A bill to effectuate this recommendation was introduced but it came to naught. In the opinion of the writer, a legislative definition of patentable invention is unlikely and this is borne out by the fact that the Patent Revision Bill*, which represents the combined thought of the entire patent profession does not contain a positive pronouncement on what constitutes invention.

If there is no accepted definition of invention, how can a patent attorney determine whether a given invention is patentable or not? Apparently all the patent attorney can do in a particular case is to give an intelligent guess or opinion, if you will, based on what the Patent Office and the courts have said in prior cases.

Practical Test of Invention

As a guide, the reader should ask himself two questions if he has done anything which he thinks patentable:

(1) Is the process or composition new? It is not necessary that a basically new process or composition be involved; it is only necessary that the process or composition possess *some element* of novelty. Changing the order of adding the reactants, raising or lowering the temperature, substituting one reactant or solvent for a previously used one, etc. may result in a patentable process. So also the addition or omission of ingredients in a known composition may result in the modified composition being patentable. The word "may" has been used advisedly in the last two sentences, for if the results obtained could be predicted in advance then of course there is no patentable invention involved.

(2) Is the process or the composition of any commercial value, i.e., is it of practical use?

If the above two questions can be answered in the affirmative by the reader it is believed that he is warranted in passing on the question of possible patentability to his or his firm's patent attorney for the latter's opinion. Of course, other factors beside that of "invention" will be present. These are set out in the basic statute (U.S.C., title 35, sec. 31):

Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvements thereof, or who has invented or discovered and asexually reproduced any distinct and new variety of plant, other than a tuber-propagated plant, not known or used by others in this country, before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof or more than one year prior to his application, and not in public use or on sale in this country for more than one year prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law, and other due proceeding had, obtain a patent therefor. (The period is two years instead of one year where the application was filed prior to August 5, 1940.)

Trade-Secret v. Patent

If we assume that something of possible patent nature has been done it is believed that one of the first decisions which should be made is whether the matter should be treated as a trade-secret or whether a patent application should be applied for. The answer of course will depend on a number of factors. Trade secrets, where they can be effectively utilized, give some protection. However, if someone else hits upon the same idea the earlier discoverer or inventor operating under the protection of the trade secret has no right against the later inventor. Indeed, it is possible that the later inventor may obtain a patent valid even against the earlier inventor. Also, it is not too difficult a matter today to detect and prove in court infringement of a chemical process without recourse to industrial "spies." In this connection the federal courts nowadays, while they say they will not permit anyone to pry into another's affairs by way of a "fishing expedition", nevertheless do permit the parties a great amount of leeway in finding out about the operations of the other party so long as they are material to the matters at issue. Another matter to keep in mind after an invention has been made is that you will be disqualified from obtaining a valid U.S. patent if you permit your invention to go into public use or sale in the United States for more than one year before you apply for a U.S. patent. It is surprising how many inventors, particularly those of the "garret" type and those connected with small companies, have lost all rights to U.S. patents on their inventions because they utilized their inventions commercially for more than one year before applying for a patent.

Perhaps a word of caution should be inserted at this point to those who might feel that they can have their cake and eat it too by first keeping the subject matter of an invention secret for some time and then, for some reason best known to themselves—for example, if they think someone else has hit upon the same idea—try to obtain patent protection. It may then be too late. In some such cases the courts have held that keeping an invention secret for years constitutes abandonment of the invention and hence no patent may later be obtained.

Consequently, it can be seen that it is theoretically possible to protect a secret process but this method of protecting the fruit of intellectual endeavor is fraught with considerable weakness. In so far as the drug and cosmetic industry is concerned, protecting an invention by keeping it as a trade secret is a particularly inadequate one. For one thing, most drug and cosmetic inventions relate to new compositions of matter. When these are sold on the market they can be analyzed, and if there is no patent in the picture a competitor may duplicate the composition legally and sell it. Also, even though many drug and cosmetic patents involve processes, these processes are very often practiced out in the open (as for example, hair waving). Consequently, detection of infringement is a relatively simple matter. Finally, as already noted, the courts these days are very lenient in permitting the patent owner to utilize court machinery to determine whether actual infringement has occurred.

(To be continued)

*This journal, March, 1950; Oct., 1951

Prevention of Dental Caries

(*Continued from page 327*)

well as other investigations in this field which we have not discussed, are reviewed critically it seems probable that, for the time being at least, we should accept this conclusion at face value. While one cannot categorically deny that the ammoniated dentifrices are effective in reducing dental caries, it seems at best a very weak crutch on which to lean. Even if the studies of Kesel, *et. al.* are substantiated, which show that the use of an ammoniated dentifrice will reduce caries incidence by 12 per cent, we cannot help but be left with a feeling of disappointment and an abiding idea that the results must be better than this if it is to be a method which can be wholeheartedly recommended and accepted.

In the early days, at least, penicillin was frequently referred to as "the yellow magic." Although it is not very yellow any more due to improved methods of purification, it is still associated with the realm of magic in the eyes of many people, particularly the laity, although the aura surrounding it has been somewhat dulled by the advent of many other antibiotics. It is little wonder, therefore, that the introduction of a penicillin-containing dentifrice has created widespread interest. As early as 1946, McClure and Hewitt of the U. S. Public Health Service reported on the effects of penicillin in reducing dental caries in rats fed on a corn meal diet. Eighty-two rats were used in the control group and a like number in the experimental. Both were fed the same diet of corn meal. The experimental group, in addition, received 75 units of penicillin per gram of diet and also 75 units of penicillin per cc. of drinking water. In the control group, 50 per cent of the animals experienced dental caries, while there were none in the experimental group. In the control group, 6.8 per cent of the total number of teeth had carious lesions while there were none in the experimental group. Data of this kind is very clear-cut and encouraging.

In 1949, Hill and his co-workers at Western Reserve University also reported on the effects of penicillin in reducing rat caries when fed a caries-producing diet. In a group of animals receiving a caries-producing diet with plain water as the source of drinking water, it was found that 70 per cent of the animals developed caries. In the experimental group on the same diet, using drinking water containing 5 units of penicillin per cc., only 50 per cent developed caries. In another series of animals receiving the caries-producing diet with drinking water containing 1.5 per cent of sucrose, 100 per cent of the animals developed caries. The experimental group receiving the same diet and the same glucose water to which had been added 5 units per cc. of penicillin, yielded a caries incidence of only 68 per cent. Bacteriological studies on these animals indicated that penicillin was effective in reducing *Lactobacillus acidophilus* counts of the saliva. Zander and Bibby at Tufts Dental School reported on the effects of penicillin tooth paste on the incidence of

THIS IS HOW THE SANITYPE CAN HELP YOU

PRESSURE STERILIZING FILTERS

for Bacteriological, Biological Pharmaceutical, Chemical and Food Filtration

Write For Bulletin

All stainless steel, with no porous, pitted or rough surfaces—and every part coming in contact with liquid, highly polished. All unnecessary threads, welds, etc. have been eliminated, simplifying cleaning. Quickly opened and closed. Flexible for double or triple filtration. No rubber washers. Uses any type pad, paper or cloth.

F. R. HORMANN & CO., INC.

17 STONE STREET • NEWARK 4, N. J.

Northern Glass Company, 118 Sacramento Street, San Francisco, Cal.

ALKALOIDS

GLUCOSIDES--- SOLID EXTRACTS

POWDERED EXTRACTS

Aconitine	Emetine	Physostigmine
Agaricin	Ephedrine	Picrotoxin
Arbutin	Esculin	Pilocarpine
Arecoline	Eserine	Podophyllin
Asparagin	Helenin	Powdered Extracts
Aspidospermine	Homatropine	Quassin
Atropine	Hydrastine	Rutin
Berberine	Hydrastinine	Sanguinarine
Brucine	Hyoscine	Scammony Resin
Cantharidin	Hyoscyamine	Solid Extracts
Colchicine	Jalap Resin	Sparteine
Digitalin	Lobeline	Strophanthin
Digitonin	Ouabain	Strychnine
Digitoxin	Pelletierine	Yohimbine

SPECIAL PRODUCTS PRODUCED ON REQUEST

INLAND TIPTON, IND

INLAND, THE HOUSE OF ALKALOIDS

PRICE COMMENSURATE WITH QUALITY SINCE 1917

INLAND ALKALOID CO.

MANUFACTURING CHEMISTS

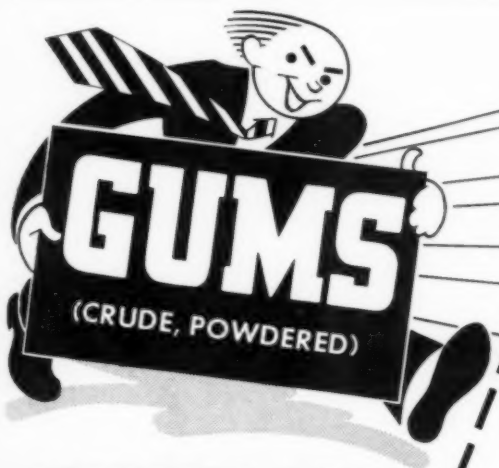
P. O. Box 88 TIPTON, INDIANA, U.S.A.

caries in hamsters. The teeth of one series of animals were brushed daily with penicillin tooth paste for 24 days and showed an average of 1.14 carious teeth per animal. The control group whose teeth were brushed with the same dentifrice without penicillin gave a value of 3.87 carious teeth per animal. In still another group of animals which received no tooth-brushing of any kind, examination revealed 9.25 carious teeth per animal. All animals were on a caries-producing diet.

So much for laboratory and animal studies. Hill and his co-workers at Western Reserve Dental School also carried out experiments on the effects of a penicillin dentifrice in school children. The dentifrice used contained 1000 units of penicillin per gram. Although there were no significant differences in the number of new carious lesions when the control group was compared with the experimental group, it was found that the group using the penicillin dentifrice showed a reduced *Lactobacillus acidophilus* count. The remainder of the natural bacterial flora of the mouth showed little change although the number and occurrence of organisms were somewhat reduced. The authors concluded that the incidence of caries was not reduced, but did not interpret this to mean that a penicillin dentifrice under proper conditions would be ineffective. In these particular experiments the brushing of the teeth by the school children was unsupervised. It is possible, therefore, that many of the children did not cooperate, and the possibility also exists that there may have been an interchange of the control and experimental dentifrice between the various children which would tend to negate any results that might otherwise have been obtained.

Undoubtedly one of the most extensive and thorough studies on the effects of a penicillin dentifrice on caries incidence in humans was the one reported by Zander of Tufts College Dental School. In this project, 174 school children ranging from 6 to 14 years of age served as the control group, using a tooth powder containing no penicillin. In the experimental group, there were 235 children of the same age range, using a tooth powder of the same composition except that it contained 500 units of potassium penicillin per gram. Both groups of children brushed their teeth once daily in the classroom under the supervision of the teacher or hygienist. They were also instructed to use the powders at home every morning and evening. After one year under this regimen, clinical and roentgenographic examinations revealed that the penicillin dentifrice reduced the incidence of caries by approximately 50 per cent as compared to the control group using the same dentifrice without penicillin. At the end of two years, the figures were about the same. One aditional observation that is worthy of comment, since it is somewhat puzzling in view of the above results, is in connection with studies on the *Lactobacillus acidophilus* count during this period. It was found that the use of the penicillin dentifrice had very slight if any effect in reducing the acidophilus count. It is also worthy

(*Continued on page 400*)



GUM ARABIC
GUM ARABIC BLEACHED
GUM GHATTI
GUM LOCUST (Carob Flour)
GUM TRAGACANTH
GUM EGYPTIAN
GUM KARAYA (Indian)

CASEIN
EGG YOLK
EGG ALBUMEN
BLOOD ALBUMEN

MENTHOL
(Crystals)
JAPAN WAX
QUINCE SEED

CHEMICALS AND DRUGS

REPRESENTATIVES:
CHICAGO: CLARENCE MORGAN, INC.
BOSTON: P. A. HOUGHTON, INC.
PHILADELPHIA: HARRY W. GAFFNEY
LOS ANGELES: JOHN A. HUGHES
ST. LOUIS: C. L. IORNS CO.

PAUL A. DUNKEL & CO., Inc.,
IMPORTERS AND EXPORTERS
1 WALL ST. NEW YORK 5, N. Y. Hanover 2-3750
CHICAGO: 325 NO. WELLS ST. TEL. SU. 7-2462

Perfumer's Shelf

Conversion of Liminone to Carvone

In the *Journal of the American Chemical Society* (73:5856, 1951), E. E. Royals and S. E. Horne, Jr. report that *d*-limonene has been converted into *l*-carvone in over-all yield of 56 to 60 per cent. *d*-Limonene was converted to the nitrosochloride by the action of ethyl nitrite and hydrogen chloride in ethyl alcohol solution at −5°C. The yield was 80 per cent. *d*-Limonene nitrosochloride was dehydrohalogenated to *l*-carvoxime in 90 to 95 per cent yield by the action of pyridine. Hydrolysis of *l*-carvoxime by refluxing with 5 per cent aqueous oxalic acid under carefully controlled conditions gave *l*-carvone in 78 to 80 per cent yield.

Essential Oil of Bursera Microphylla

According to C. E. Bradley and A. J. Haagen-Smit (*J. Am. Pharm. Assoc.* Scient. Ed. 40:591, 1951), the Bursera family of trees and shrubs are sources of aromatic gums and resins and were used by the ancients in the preparation of perfumes, frankincense and myrrh. Two of these species are native to Arizona and California, namely, *Bursera microphylla* and *Bursera odorata*. *Bursera microphylla* is found in southwestern Arizona, southeastern California, and Mexico. It grows on rocky slopes up to 2,500 feet elevation. The plant is sensitive to frosts and is confined to relatively small areas of moderate elevation.

The essential oil is located chiefly in the leaves and bark of the young twigs, especially at the base of the spurs to which the leaves are attached. When the leaves are plucked from a lush, well-watered tree, tiny jets of oil are ejected from the spur base to a distance of one to two inches from the source—showing the oil is under pressure in the plant. If the branch is removed from the tree, oil does not flow on removing the leaf spur. Bradley and Haagen-Smit found that the the essential oil of leaves and twigs of *Bursera microphylla* consists of 80 per cent terpenes, 9 per cent sesquiterpenes and oxygenated compounds, and 8 per cent gums and resins. The terpene fractions consist largely of *d*, α-and β-phellandrene, tetrahydrocuminic acid (phellandric acid), and sesquiterpenes.

The wood of the plant yielded only traces of the oil on distillation. Distillation of the green bark with steam yielded 0.2 per cent of a colorless oil. The odor of the oil was of phellandrene with a slight aromatic background. The density of the bark oil was 0.8760, considerably higher than the leaf and twig oil from this tree. Analysis and fractionation showed the oil to consist largely of sesquiterpenes.

Perfumed Baits

It is noted in the *Journal of Commerce* (Jan. 10, 1952) that a chemist at the Case Institute of Technology has reported the development of perfumescented bait that will make lobsters rush into fishermen's traps. Similar fragrant bait for fish can be expected in the near future. Conceivably, says the editorial, these experiments were launched after observing the magnetic effect of perfume on many poor fish of the genus *homo sapiens*.

Oxidation of Peppermint Oil

In a study of factors affecting peppermint flavor, R. H. Reitsema and F. J. Cramer (*Ind. & Eng. Chem.* 44:176, 1952) point out that peppermint oil is known to change in odor and flavor after prolonged storage. In the opinion of these workers, the problems of proper storage conditions, type of container, and possible antioxidants requires a good measurement of the oxidation. After a survey of possible methods of measurement, oxygen uptake and change in viscosity were selected for the work. It was found that, in general, oil from the Midwest oxidized at a slower rate than did the oil from Oregon and western Washington, and that oil from the eastern Washington area oxidized the most rapidly. The type of container showed little effect on the oil, although oil stored in glass containers appeared to change the least. Removal of early fractions by steam distillation gave inconclusive data. Several promoters and inhibitors of the oxidation were found. Nordihydroguaiaretic acid was shown to be a very effective antioxidant.

This work indicates the optimum conditions for storage of oil and possible ways to avoid deterioration of the peppermint flavor during storage. Thus, it was found that the rate of oxidation of the oil can be varied merely by altering the temperature of the oil. Very little change takes place in oil stored properly in full containers in the dark and at temperatures below normal room temperatures. After five years, for instance, one sample stored in a full drum showed no change in specific gravity or refractive index, 0.2 per cent change in ester assay, and 1 per cent change in alcohol assay

Ceylon Citronella Oil

Data on Ceylon citronella oil, as given in a Dutch report, are cited in the *Journal of Pharmacy and Pharmacology* (3:679, 1951). Here it is noted that the citronella oil of Ceylon comes from *Andropogon nardus* L., which is a different variety from that of Java. Comparative figures for the two oils are as follows:

	Java oil	*Ceylon oil*
Specific gravity	0.881 to 0.889	0.894 to 0.910
Index of refraction	1.467 to 1.473	1.479 to 1.485
Specific rotation	up to −4°, rarely +	−7° to −15°
Citronellal, per cent	33 to 37	maximum 10p
Total geraniol, per cent	minimum 85	minimum 57

It is pointed out that there is also some difference in the odor of the two oils.

Hincki Leaf Oil

In reporting on the characteristics of hinoki (*Chamaecyparis obtusa*) leaf oil, T. Moroe and G. Hara (*J. Pharm. Soc. Japan* 71:503, 1951 through *Chem. Abstr.* 45:9223, 1951) state that the oil showed the following physical properties:

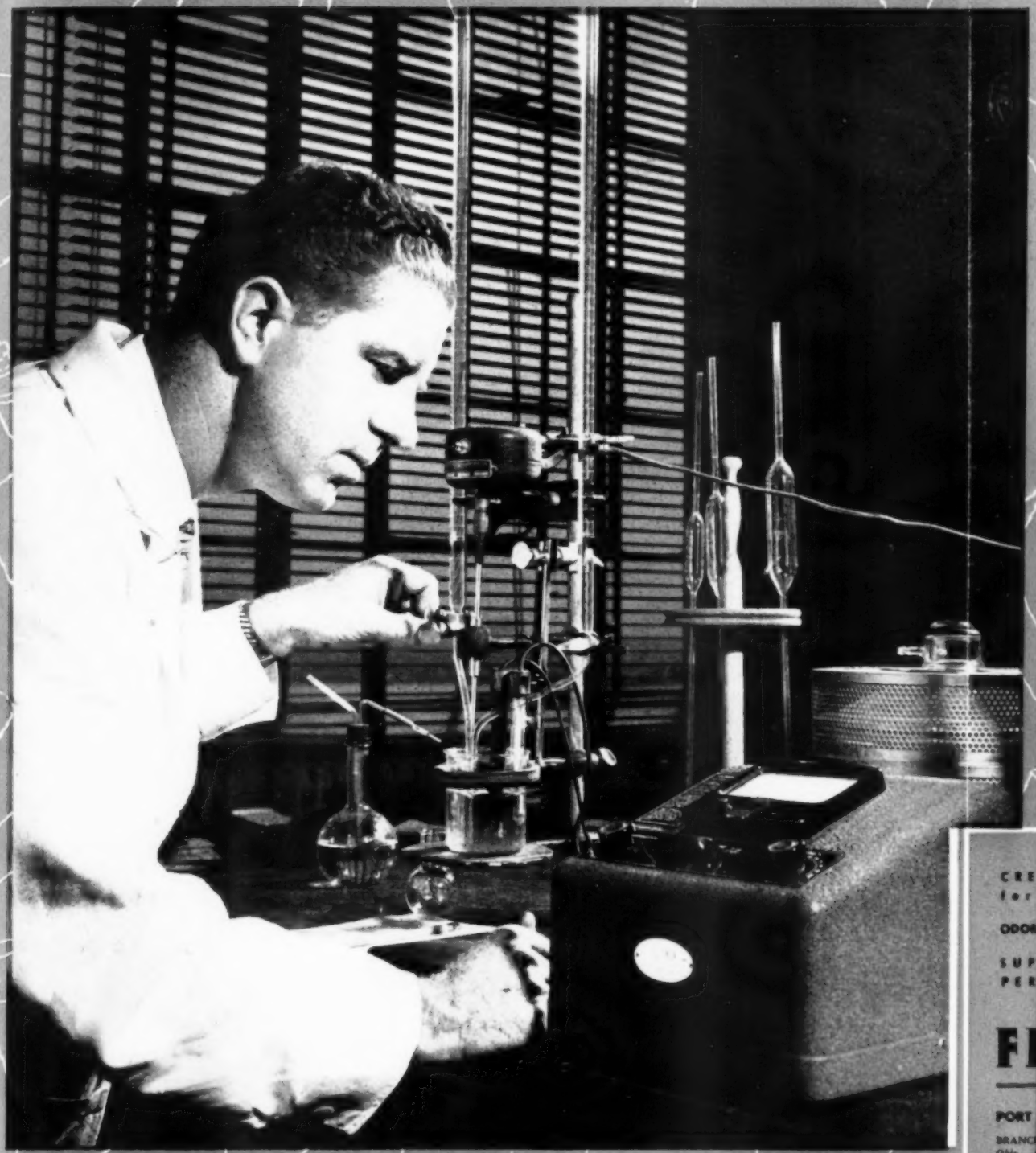
Specific gravity	**0.8984**
Index of refraction	**1.4819**
Specific rotation	**+43.05°**
Ester number	**69.05**

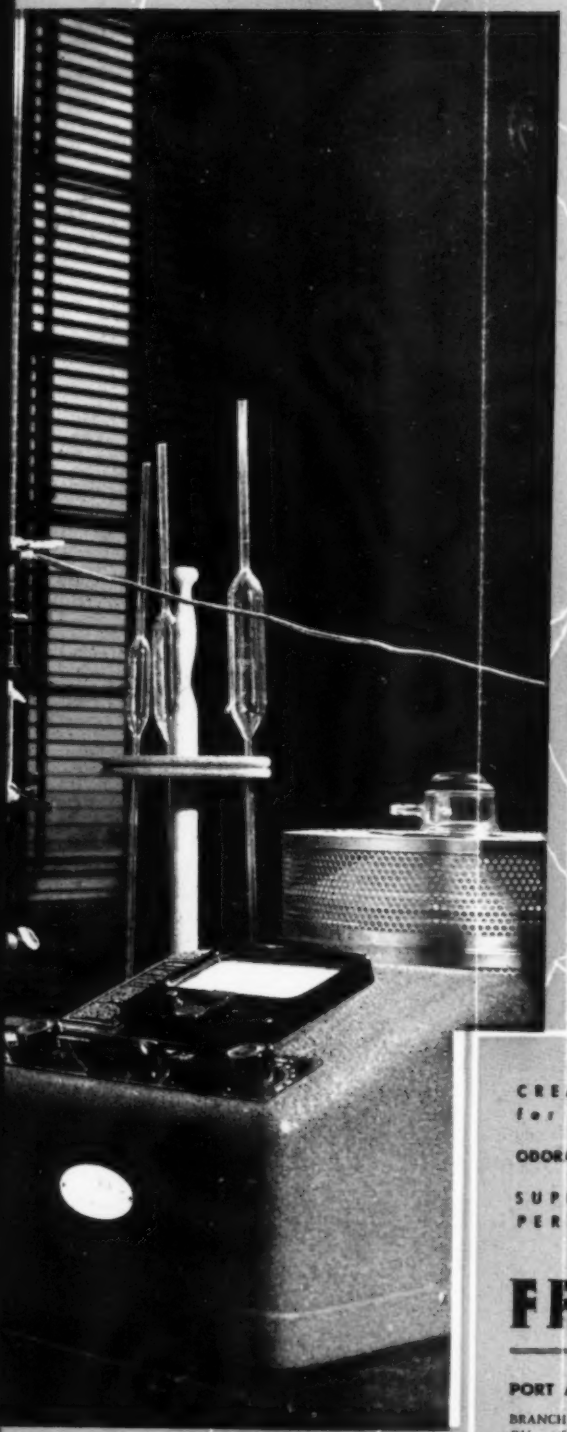
The oil contained 50 per cent of *alpha*-pinene and limonene, 12 per cent *d*-bornyl acetate, 12 per cent *d*-terpinyl

WHAT WE BRING TO YOU...

THERE'S a thought for everyone in the philosophy of a certain educator who, though seriously handicapped by physical incapacitation early in his academic career, found the seeds of strength and eventual accomplishment in the wise counsel of his mother. Sensing her son's discouragement over a crippling affliction, she convinced him that it is not what life brings to the individual that counts, but what *we,* as individuals, bring to life. Which, when analyzed, seems to be not only a good approach to personal achievement, but an absolute "must" for any business whose success is measured by the loyalty of its customers and the volume of its sales. In point of importance, it is not so much what these customers bring to the producer that counts, as what *he* brings to them. Their "bringing" is limited to orders for goods which they can give or discontinue at will; his—the seller's—"bringing" is of a different sort and goes far deeper. It is best expressed in terms of *service, quality, value* and *satisfaction,* which in time create confidence and good will. . . . And as long as we think first, last and always of what **FRITZSCHE** can bring to its customers, rather than what they can bring to us, we know we shall never fear the want of large and loyal patronage from those we aim to serve.

FRITZSCHE BROTHERS, Inc.





WHEN you place an order today for perfume compounds or aromatics, you can usually do so with utmost confidence, for the standards of quality have been so improved and methods of refinement and control of basic materials so perfected that inferior lots cannot escape the practised eye of any supplier who is unceasingly vigilant. Here at FRITZSCHE'S we consider no detail of production or control too trivial for observation. We believe implicitly in the adage, "a chain is no stronger than its weakest link", and by the same token, a perfume is no better than the basic ingredients from which it is made.

CREATORS of MADE-TO-ORDER FRAGRANCES for PERFUMES, TOILETRIES and COSMETICS

•

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

•

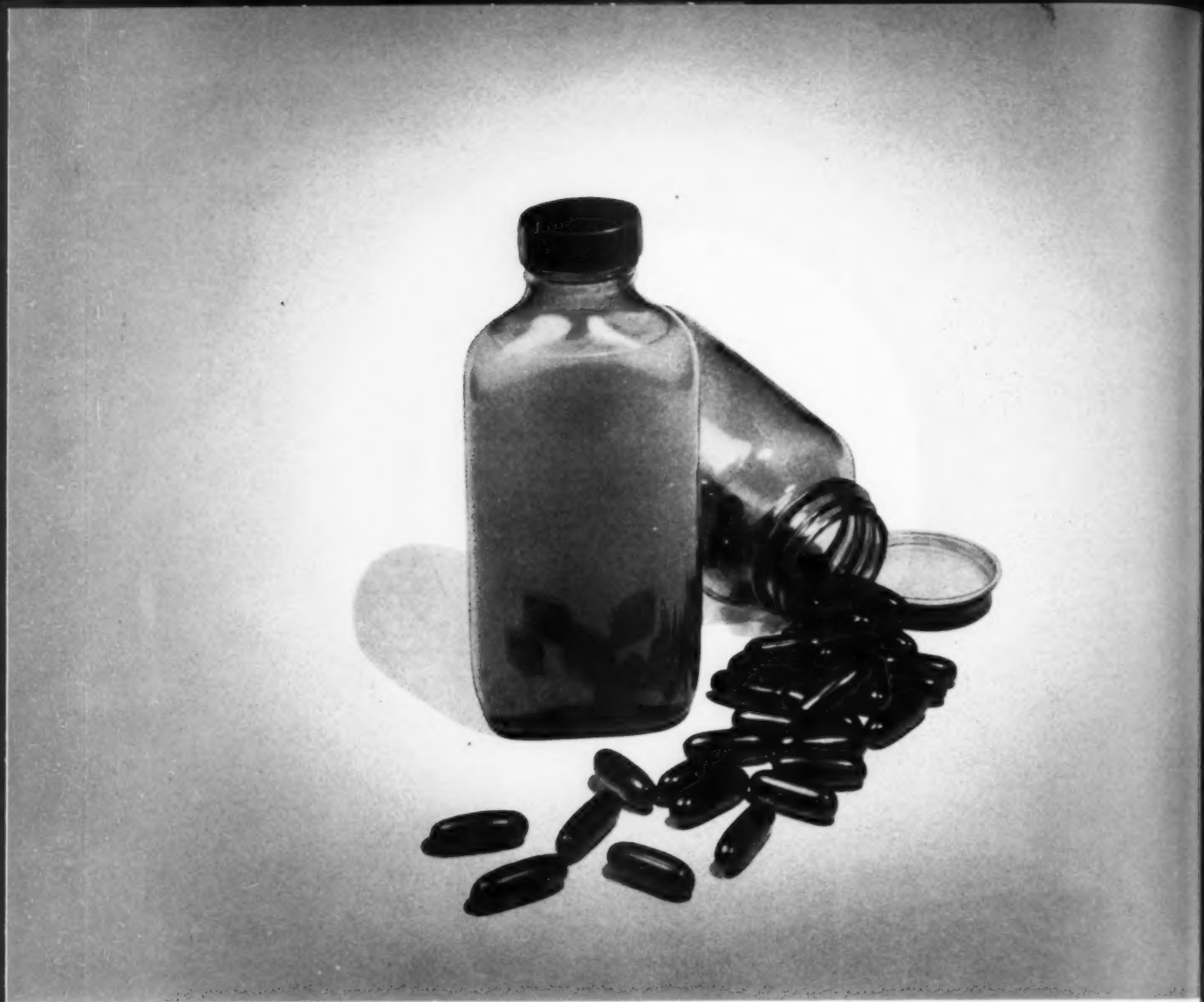
SUPPLIERS of AROMATIC CHEMICALS, BASIC PERFUME and FLAVOR RAW MATERIALS

•

FRITZSCHE Established 1871 **Brothers, Inc.**

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and *STOCKS: *Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, *St. Louis, Missouri, *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.



HIDING DISTASTEFUL FLAVOR....

The faintly flavored capsule provides one method of administering a distasteful dose and avoiding its contact with the patient's rebellious taste buds. But unpleasant medicinal flavors are not always so easily hidden, as for example, emulsions of certain tonics. Special skill in flavor blending to mask the taste is sometimes the manufacturer's only alternative. We have that special skill within our organization and it is yours—the pharmaceutical manufacturer's—if you will but take us into your confidence and let us carefully study your problem *before* introducing your new product. Modern flavoring techniques provide a safe, sure approach to the production of more palatable medicinal products. We invite a private consultation concerning yours.

FRITZSCHE *Established* 1871
Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES *and* °STOCKS: *Atlanta, Georgia, Boston, Massachusetts, °Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, °Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, °St. Louis, Missouri, °Toronto, Canada and °Mexico, D. F.* FACTORY: *Clifton, N. J.*

acetate and 25 per cent sesquiterpene and sesquiterpene alcohol. It contains hinokic acid, $C_{15}H_{22}O_2$, consisting of plates melting at 165 to 166°C. Hinokic acid is monobasic, has two double bonds and its structure is assumed to be a bicyclic sesquiterpenecarboxylic acid. Hinokic acid gives a tetrahydro compound that melts at 153°C. The acid inhibits the growth of *M. tuberculosis* (avian type) at a dilution of 1: 10,0000.

Factors Affecting Lavender Quality

In discussing the factors affecting true lavender, G. J. Hackforth-Jones (*Soap, Perf. & Cosmetics* 24:791, 1951) states that no two oils are identical and one can also fairly say that no two plants are identical. Even when identical plants are distilled the essences will not be identical unless the ripeness, the speed of collection, the type of apparatus, the speed of distillation, the efficiency of condensation and the type of receiver are also identical. When similar oils are stored they will not remain similar unless the physical conditions are identical; and in all cases there is a wide difference in the oils obtained from a single plant from year to year.

He points out that a lavender oil consists of a mixture of inodorous terpenes and odorous oxygenated products. The ester content bears little relation to the percentage of oxygenated products which is generally constant between 60 and 70 per cent, but gives some indication of the regional source of the lavender. Following cutting, it is important that distillation be done quickly otherwise the lavender becomes "mossy." The type of still and manner of distillation also influence the quality of the oil. Distillation over a long period hydrolyses the esters, about 3 per cent being lost. Odor is unchanged or even superior at first, but the free acid produced soon resinifies the product. Distillation should, therefore, be as rapid as possible.

In considering the effect of storage, Hackforth-Jones notes that the odor of lavender passes through four phases. When freshly taken from the still it has an unpleasant sour note, similar to that of the water from which it is separated. After a week or so this is lost, but the essence remains exceedingly new, with a newness something akin to that of neroli. The butyric characteristics are accentuated, giving a note far from agreeable. This newness passes off in a period varying from one to ten months, depending on the type of lavender. Ordinary 38/40 lavender which is not noticeably butyric, soon loses its newness, but lavender of 45 per cent and over retains it for longer periods, depending on the region. The Barreme type lavender is typical of new high ester lavender—a very fine quality. Once the newness has disappeared, lavender passes into the condition in which it is normally offered for sale. There is some deterioration with age, but if stored under ideal conditions, deterioration is not evident until the third year. Lavender should be stored in large, well-filled, tightly stoppered, opaque containers and maintained at the lowest temperature practicable.

Masking Distasteful Drugs

In a symposium on pharmaceutical formulation, C. J. Eastland (*J. Pharm. & Pharmacol.* 3:942, 1951) remarked that while the psychological effect of taking bitter or obnoxious preparations, may still have some influence, modern practice tends towards presenting bitter drugs in the most palatable form possible. When tablets or capsules are practicable, this is the chosen form of presentation, but for infants or young children a liquid preparation is often essential and many efforts are being made to find suitable and effective masking agents. It is now recognized that even with adults an oval preparation which creates nausea or other unpleasant sensation, especially on repeated dosage, may defeat its purpose.

After briefly reviewing recent work in this field, Eastland states that experience has shown that the problem of flavoring or masking distasteful drugs may be approached in one or more of the following ways: (1) To use as flavoring agent a pleasantly flavored substance which has also something in common, in its flavor, with the bitter drug. The use of orange with gentian and quinine is an example of this method of approach. (2) To use substances such as menthol or oil of peppermint to produce a mild local anesthesia. (3) To use as menstruum colloidal solutions such as mucilage of acacia. The mechanism involved here is not known, but such solutions are certainly effective in many cases. (4) To use moderate concentrations of sodium chloride, in which the bitterness of some drugs is lessened.

Obnoxious flavors of oil-soluble substances can be dealt with by producing emulsions of the oil-in-water type, but it is less often possible to utilize this effect of emulsification for water-soluble substances, which of course should form the disperse phase.

Ottos of Indian Jasmin

Following a review of the cultivation, extraction methods and properties of *Jasminum grandiflorum*, D. R. Dhingra, G. N. Gupta and J. N. Mehrotra (*Indian Soap J.* 16:235, 1951) present information on the characteristics of one sample of the otto prepared by enfleurage and obtained in a yield of 0.018 per cent (based on the weight of the flowers). The otto was found to have the following properties:

Specific gravity	**0.9814**
Index of refraction	**1.497**
Specific rotation	**+4.2628**
Acid number	**1.16**
Saponification number	**278.06**
Aldehyde and ketone content	**3.0 per cent**

An analysis of the sample showed that the otto contained:

Total ester, calculated as benzyl acetate	**74.80 per cent**
Total alcohol, as benzyl alcohol	**15.46 " "**
Methyl anthranilate	**0.45 " "**
Indole	**1.75 " "**
Jasmone	**3.00 " "**

The sample did not congeal by cooling to −5° C. but separated into two layers, the upper being transparent and the lower thicker and darker.

In another report, B. N. Gupta Dhingra and G. N. Gupta (*Perf. & Essent. Oil Rec.* 42:369, 1951) present similar data on the otto of *Jasmin auriculatum* (Juhi). The physical properties of the otto were given as follows:

Odor	**Very pleasant odor similar to fresh flowers.**
Color	**Dark red.**
Specific gravity	**0.9548**
Refractive index	**1.5185**
Optical rotation	**Could not be determined due to its dark color.**
Solubility	**In all proportion in 85% alcohol.**

The chemical constants of the otto were as follows:

Acid value	**7.2**
Ester value	**132.84**
Acetyl value	**275.3**
Methyl anthranilate	**6.1 per cent**
Saponification value	**140.04**
Ester, calculated as benzyl acetate	**35.7 per cent**
Alcohol, as linalool	**43.81 " "**
Indole	**2.82 " "**

In concluding their report Dhingra and his associates observe that the odor of otto of Juhi is more pleasant and delightful than other types of jasmin otto and it therefore appears advisable to encourage its cultivation on a bigger scale.

CHEMICAL **KESSCO PRODUCTS** SPECIALTIES

EMULSIFIERS
of Definite Specifications

GLYCERYL MONO STEARATE
PURE AND SELF-EMULSIFYING

KESSCO WAX A-21
FOR ANTI-PERSPIRANTS, DEODORANTS, OINTMENTS

PROPYLENE GLYCOL MONO STEARATE
PURE AND SELF-EMULSIFYING

new
POLYMERIZED GLYCOL STEARATES, LAURATES, OLEATES, ETC.
for
PHARMACEUTICALS, TOILETRIES, COSMETICS ETC.

ESTABLISHED 1921

KESSLER CHEMICAL CO., INC.
STATE ROAD and COTTMAN AVE. • PHILADELPHIA 35, PA.

PerfeKtum
TAB-COUNT

MODEL T-400

A modern counting and filling machine for accurate and economical packaging of a wide range of tablets and capsules, PerfeKtum variable speed counter operates by *count*—not *weight* and can be set to count and fill up to 1500 bottles of 100 tablets per hour.

A series of custom built counting discs may be supplied with each machine for your different tablet products.

Send for the new 1952 Popper catalog

EST. 1922 **POPPER & SONS, INC.**
300 FOURTH AVENUE
NEW YORK 10, N. Y.

FOUNDED T & B 1856
The Symbol of Standardization

GUMS
ARABIC
TRAGACANTH
KARAYA

WHOLE GUM—Cleaned and repacked before shipment.

POWDERED GRADES—Standardized by milling under strict laboratory control.

GRAIN GUMS—Graded to uniformity and standardized.

T & B STANDARDIZED GUMS are your best protection against production difficulties.

All Powder Gums Standardized by Laboratory Control

THURSTON & BRAIDICH
286 Spring Street **New York 13**
Represented in Chicago by A. C. Drury & Co., Inc.

Advancing Therapy

Nitrogen Mustard for Arthritis

A preliminary report has been given by C. J. Diaz, E. L. Garcia, A. Merchante and J. Perianes (*J. A. M. A.* 147:1418, 1951) on the "remarkable results" obtained with the use of nitrogen mustard in the treatment of rheumatoid arthritis. Of nine patients treated, five improved extraordinarily, with complete disappearance of the pain and swelling of the joints and recovery of normal movement. In three other patients the ensuing improvement was considerable, even though not so complete. Two patients with status asthmaticus were also treated, the dyspnea disappearing after the first injection.

Cortisone and ACTH in Dermatology

In their report on the use of cortisone and corticotropin (ACTH) in dermatology, R. R. Kierland, P. A. O'Leary, L. A. Brunsting and J. W. Didcoct (*J. A. M. A.* 148:23, 1952) state that these drugs have been administered in patients with acute and chronic lupus erythematosus, psoriasis, scleroderma interstitial keratitis (locally applied cortisone used), lymphoblastoma, urticarial and eczematous states, pemphigus vulgaris, and pemphigus foleiaceus. From an analysis of their results these hormones are recommended for the relief of symptoms but not with hope of cure. Worth-while results have been obtained in cases of acute lupus erythematosus, early scleroderma, pemphigus vulgaris, pemphigus foliaceus, psoriatic arthritis, certain forms of exfoliative dermatitis, drug and serum reactions, and for the intense pruritus of some eczematous states. Syphilitic interstitial keratitis is influenced remarkably by the local instillation of 1 to 2 per cent suspension of cortisone. These hormones are not considered efficacious at this time for uncomplicated psoriasis, the usual eczematous patient, or for lymphoblastoma of the skin. In all cases an effort should be made to find the minimal maintenance dose that provides suppression and relief of symptoms. Variation in reaction of individual patients to these hormones prohibits a statement as to duration of tratment. These hormones should not be administered promiscuously, without knowledge of their physiological effects and dosage and of the influence of infection on those receiving such treatment.

Cortisone and PABA for Arthritis

Results of combined treatment with cortisone and para-aminobenzoic acid (PABA) in a group of fifteen patients with moderately severe or severe rheumatoid arthritis are presented by L. L. Weisel, A. S. Barritt and W. M. Stumpe (*Am. J. Med. Sci.* 222:243, 1951). Cortisone was given in daily intramuscular doses of 25 mg. each, and the PABA was given orally in divided doses up to a daily total of 12 Gm. It is known that neither drug alone is effective in these amounts for rheumatoid arthritis. Nevertheless the additive or synergistic effect of the combination was uniformly beneficial. The results were comparable with those obtained by administration of much larger doses of cortisone alone, with the additional advantage of a reduction in side reactions.

Weisel and his colleagues feel that the additive or synergistic action of these two compounds warrants further and more extensive use of this method in rheumatoid arthritis.

Antihistamines in Trauma

The possibility that antihistamines may be useful in the treatment of surgical and accidental trauma is indicated in the report of M. M. Kessler and G. H. Van Amburgh (*Indust. Med. & Surg.* 20:567, 1951). Their views are based on observations of 100 cases of accidental trauma and 98 cases of surgical trauma treated with such drugs by the oral and intramuscular routes. Their observations indicate that pain is markedly decreased following antihistamine administration in both surgical and accidental trauma. Edema, which is of great concern where casts must be applied as well as in other orthopedic problems, is markedly decreased by the administration of these drugs. There is also a definite decrease in edema following surgical trauma, as evidenced by the absence of tissue reaction around the traumatized area, together with absence of cutting of tension sutures and all clips.

In the opinion of Kessler and Van Amburgh, the effectiveness of the antihistaminics in the cases studied indicates that histamine must play an imporant role in the phenomenon of trauma.

Terramycin and Venereology

On the basis of his own finding's and from a review of the medical literature, R. R. Willcox (*Practitioner* 167:636, 1951) reports that, in small doses, terramycin is r e a s o n a b l y effective against gonorrhea and it is of value as an alternative to penicillin. It ranks with aureomycin in the treatment of lymphogranuloma venereum, at least equal with aureomycin, chloramphenicol and streptomycin in the treatment of granuloma inguinale, and its effectiveness against non-specific urethritis cannot be bettered. It is suitable for the mass treatment of the treponematoses under certain conditions, and has proved effective in the treatment of yaws. Its use in the treatment of syphilis in the individual must still be regarded as experimental. Terramycin would thus appear to possess considerable potentialities in the management of the venereal diseases, both in treatment and in prophylaxis.

Of related interest is the report of C. Livaditi and A. Vaisman (*Antibotics & Chemother.* 1:425, 1951). From their studies terramycin appears to be an antisyphilitic medication of the first order. Its therapeutic effects are manifested in the rabbit by rapid immobilozation of *Treponema pallidum* in the scrotal syphilomas and their early disappearance, as well as by prompt healing of these syphilomas and, finally, by sterilization of the blood and of popliteal glands 42 and 45 days following the initiation of treatment. The same therapeutic effects apply to mice and can be verified by microscopic sterilization of dispersed treponemosis from the eleventh or twelfth day on.

From this viewpoint, terramycin therefore a p p r o x i m a t e s penicillin. Nevertheless, only by carrying out comparative tests with precise dosasge

U. S. P.

PRECIPITATED CHALKS

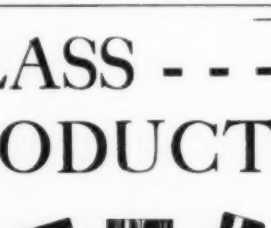
COLLOIDAL KAOLIN

TALCS

1897 — 1952

CHARLES B. CHRYSTAL CO., INC.
53 PARK PLACE • NEW YORK 7
PLANT NEW JERSEY

GLASS - - - PRODUCTS



New Ball Applicator

If you need glass rod applicators of any type, we are at your service. Quality and Service is our byword on all types of applicators. Your inquiries solicited. Samples and prices will be furnished promptly upon request.

Glass Products Co.
Established 1922
Vineland, New Jersey

Injectable Medication by TAYLOR

. . . is sold under some of the best known labels in the country but never under the Taylor label because—

Taylor Pharmacal Company is the only manufacturer of injectable medication which has no label of its own and does not compete with you in any way.

Find out why more and more ethical pharmaceutical manufacturers are entrusting the production of their injectables to Taylor.

Your inquiry will be held in strict confidence and will have our courteous and prompt attention. Write for price list.

Taylor — PHARMACAL CO.
Guy C. Taylor, President
678 EAST ELDORADO STREET • DECATUR, ILLINOIS, U.S.A.

MYSORE GOVERNMENT Sandalwood Oil

Distilled from
Santalum Album

INSIST ON ORIGINAL CANS AND CASES

Sole Agents for the United States
In Canada: *Sole Agents*
W. J. BUSH & CO. (*Canada*) Ltd. Montreal

W. J. BUSH & CO.
(Incorporated)
Essential Oils
19 West 44th St., New York 18, N. Y.
Chicago National City, Calif. Montreal

will it be possible to evaluate properly the antitreponemic activity of these two antibiotics. Work along these and similar lines is now being carried on.

Ascorbic Acid and Hypertension

In their report on the effect of ascorbic acid on experimental hypertension, O. Heroux and L. P. Dugal (*Canadian J. Med. Sci.* 29:164, 1951) state that previous investigations on the effect of vitamin C on the blood pressure revealed that the acid given in large doses has a hypotensive effect on normal blood pressure; that the initial hypotension due to sudden exposure to cold was prevented by large doses of ascorbic acid; and that the hypertension encountered upon long exposures to cold was lowered. The newer study confirms the last result and also shows that ascorbic acid has a hypotensive action on experimenta hypertension obtained by: (a) excess of sodium chloride in drinking water and (b) renal compression. The hypertension and adrenal hypertrophy caused by long exposure to cold regress when the animals are brought back to normal temperature. In its initial phase, the experimental renal hypertension is lowered by ascorbic acid but this effect cannot be obtained in the chronic phase.

Antibiotics and B Vitamins

In their report in the *Journal of Nutrition* (45:143, 1951), Hwa Lik and C. A. Baumann discuss the effects of antibiotics on the growth of rats receiving limited amounts of thiamine, riboflavin, or pantothenic acid. Groups of five weanling male rats were fed diets deficient in one of these vitamins and, as in a bioassay, graded doses of the vitamin were then given. Some groups also received aureomycin. Streptomycin, penicillin, teramycin chloramphenicol (Chloromycetin), 3-nitro-4-hydroxyphenyl arsonic acid, or sulfasuxidine in the basic ration. The antibiotics were most effective in diets that contained enough vitamin for half of maximum growth, and the growth responses due to the antibiotics were approximately equal to those observed when the vitamin content of the diet was doubled in the absence of antibiotics. The relative effectiveness of the antibiotics varied with the particular vitamin deficiency. In thiamine deficiency penicillin produced the greatest increases in growth; aureomycin and streptomycin produced definite but lesser increases; while chloramphenicol, terramycin, and 3-nitro-4-hydroxyphenyl arsonic acid were inactive, and sulfasuxidine exerted a delayed effect. In riboflavin deficiency penicillin and aureomycin were equally effective; some stimulation was noted with streptomycin, chloramphenicol, and terramycin in the presence of a moderate level of riboflavin; 3-nitro-4-hydroxyphenyl arsonic acid and sulfasuxidine appeared to be inactive. In pantothenic acid deficiency aureomycin and streptomycin were most effective, while penicillin was less active.

Pyromen for Depression Relief

In the *New England Journal of Medicine* (245:961, 1951), E. M. J. Fitch and A. C. Washburne state that Pyromen, a recently introduced pyrogenic agent, was reported to produce a feeling of well-being when administered in doses sufficient to produce fever. A study was undertaken by these workers to determine whether or not this effect could be induced for the relief of depression by subpyrogenic doses of the agent. Of 62 patients treated, 46 are reported. Fifteen patients with allergic symptoms and without depression served as "controls" for determining dosage. Twleve of these obtained relief. Twenty-three of 31 depressed patients obtained relief. Nineteen of the 23 proved to have allergic symptoms that also were in most instances relieved. In contrast, of 8 depressed patients who had no apparent benefit only 2 had symptoms of allergy.

On the basis of the fact that the psychologic and somatic symptoms of all patients tended to respond alike to Pyromen, it is postulated that the two types of symptoms may be elicited by a common effector agent—and that Pyromen may operate in certain cases to oppose that agent. It is suggested that its failure to mitigate depression not associated with allergic disease may point to sensitization as a potentiating factor in some depressions.

Dissolving Urinary Stones

In studies on the dissolution of urinery calculi, H. J. Suby, F. Albright, J. Wayne and E. Dempsey (*J. Urol.* 66: 527, 1951) experimented with the water softener, ethylene diamine tetra-acetic acid (Sequestrine). This softener removes from a solution not only calcium ions but also other cations. This softener was used in solutions of 1 per cent, 2 per cent, and 3 per cent. Previous studies having demonstrated that the ability of a solution to demineralize rabbit teeth grossly parallels its ability to dissolve calcium phosphate stones, each of the above solutions was tested on rabbit teeth. There was increasing demineralization of the teeth with increasing concentrations of Sequestrine. The solutions of Sequestrine were then used as irrigating solutions in the bladders of rabbits. Considerable irritation resulted, albeit less than with sodium hexametaphosphate. The efficiency of water softeners can often be increased by "wetting agents." The wetting agent, polyoxyethylene sorbitan monooleate, was used with solutions of the water softener. Despite the rather negative results obtained with the wetting agent, the investigators feel that further work with combinations of dissolving solutions and wetting agents is indicated. In addition to studies on rabbit teeth and bladders, these workers present the results of in vitro studies on the effect of Sequestrine on oxalate and uric acid stones.

Status of Ion Exchange Resins

Following a comprehensive review on the ion exchange resins as therapeutic agents, A. Jordan (*Practitioner* 167:647, 1951) has come to the conclusion that anion exchange resins, given in adequate doses, appear to be as effective as any other antacids at present used in the treatment of peptic ulcer, and to have fewer undesirable side-effects. It is claimed that they are of value in treating heartburn of pregnancy and, as a local application, in protecting the skin from the gastric juices in cases of gastric fistula. Cation exchange resins have been used for the removal of sodium ion—as a substitute for, or as an adjunct to, the restriction of sodium in the diet. In cases of edema and ascites associated with congestive heart failure, treatment with resin has shown promise; when the complications followed cirrhosis of the liver the results have been more equivocal. In edema and ascites occurring as part of the nephrotic syndrome this treatment has been almost uniformly unsuccessful. There are few reports of the use of these resins in hypertension.

He emphasizes that the use of cation exchange resins must be accompanied by careful clinical observation of the patient and repeated estimations of the serum potassium, the plasma carbon dioxide content and the serum sodium. The possibility of potassium depletion, acidosis and dehydration must be borne constantly in mind, and patients receiving digitalis preparations may develop digitalis poisoning.

PURCHASING AGENT'S BUYING GUIDE

PYRIDOXINE HYDROCHLORIDE

Quality ➧	**Meets U.S.P. Reagent Specifications**
Source ➧	**HOFFMANN-LA ROCHE INC., VITAMIN DIVISION**
Supply ➧	**Manufactured by the tons**
Special qualities ➧	**Roche pyridoxine hydrochloride is of such high quality that it may be used for parenteral solutions.** ***The need for pyridoxine in human nutrition has been established.*** **(Report of the Council on Pharmacy, American Medical Association, published in J.A.M.A., Sept. 22, 1951, pg. 322.**
Packaging ➧	**Available in polyethylene bag in 1 kilo fibre drum; smaller quantities in amber screw cap bottles.**

CALL ROCHE FOR VITAMINS

Vitamin A acetate and palmitate synthetic
Ascorbic Acid **Sodium Ascorbate**
Riboflavin **Riboflavin-5'-Phosphate Sodium**
Riboflavin-5'-Phosphate Diethanolamine
Thiamine hydrochloride **Thiamine mononitrate**
Biotin **Panthenol** **Pyridoxine hydrochloride**
Niacin **Niacinamide**
***dl*-alpha-Tocopherol unesterified and acetate**

VITAMIN DIVISION

HOFFMANN-LA ROCHE INC.

Nutley 10, New Jersey NUtley 2-5000

In Canada: Hoffmann-La Roche, Ltd., Montreal, Que.
Pacific Coast: L. H. BUTCHER COMPANY, San Francisco, Los Angeles, Seattle, Portland, Salt Lake City

Abreast Of The Markets

General Tone of Market Remains Quiet; Some Activity Noted in Essential Oils; Mercury, Glycerine Reduced

The entire market continued on the quiet side during February, with a few important changes in chemicals, and some fluctuations in the essential oils. As far as the botanicals were concerned, however, there was no immediate activity although there were a few suggestions of future trends.

Glycerine fell off somewhat in both the synthetic and natural items, while quicksilver dropped during the first week or two and then for the first time in several months reversed itself and climbed up to $205 a flask.

In the essential oil field several spokesmen indicated a decided pickup in business, although there were a number of price reductions. The citrus oils became much more active as consumers began preparing for the warmer months ahead. The surplus in orange oil which had prevailed for a short time in Florida was rapidly dwindling, and prices in California were on the way up again; Lemon oil was in the same condition.

Vanilla beans still appeared puzzling. The Mexicans continued downward, drawing closer to the Bourbon prices, while there were reports that new Bourbon crops might be lower than in 1951.

Botanicals were very sluggish, with the same complaints being issued of difficulty in obtaining replacements from the origins and late arrivals of shipments ordered months in advance.

No Relief in Lanolin

Lanolin was still very tight last month because of relative inactivity in the wool processing and wool scouring operations. While this was somewhat offset by the smaller-than-usual demand and by the fact that this country has been importing lanolin to quite an extent, there still has been no relief as far as the price ceiling is concerned.

Quicksilver Down to $205

Due to a slack demand in this country and lower-priced offerings from the foreign sources, quicksilver continued downward last month to the level between $201 and $203 a flask during the early part, later climbing up to $205. This temporary reduction was not matched in the mercurials however, for here the prices remained stable, although stocks appeared to be more than adequate for the time being.

Carnauba Wax Crop

A relatively good yield has been obtained from the 1951-52 Brazilian carnauba-wax crop, according to *Foreign Commerce Weekly*, and the final cutting last month was nearing completion. The second cutting, it was reported, was not as good as the first, as drought conditions had hindered full development of fronds. Brazil's exports in the first half of 1951 totaled 6,215 metric tons. Shipments were 11 per cent less in volume and 9 per cent lower in value than those in the corresponding period of 1950. The United States took 4,680 tons.

The estimated production by states in 1951-52 was, in metric tons: Ceara, 4,850; Piaui, 4,500; Maranhao, 650; Rio Grande do Norte, 700; Bahia, 500; and Paraiba, 300.

Aminophylline and Theophylline Down

Both aminophylline and theophylline were reduced by 75c in February, which was said to have occurred as a result of the influx of imported material into this Country. Some authorities believed that as soon as the foreign material is used up, the prices will return to their previous levels. The new prices on aminophylline ranged from $4.85 to $5.60 a pound, and on theophylline, they extended from $5 for a 100-pound drum to $5.42 for a 5-pound bottle.

Glycerine Price Down

Glycerine was down to 40¼c a pound in February for the natural, and was followed a week later by a similar drop in synthetic material down 38½c a pound. This meant that the synthetic material was offering strong competition for the natural in some lines. Demand for glycerine seemed to be on the favorable side during the period.

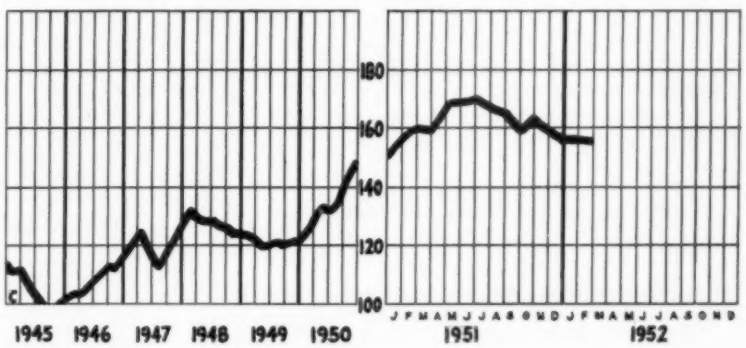
Total production of crude glycerine (100 per cent glycerol basis) in 1951 was 211,348,000 pounds, which was a decline of about 7 per cent from the 1950 all-time record production of 225,512,000 pounds, but still remains higher than any year prior to 1950, according to a report by the Association of American Soap & Glycerine Producers, Inc.

Mexican Vanilla Beans Reduced

Bourbon vanilla beans remained at January's levels in price, although it was reported that deals in this country were becoming anxious to deplete their cur-

(*Continued on page 398*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index went down from 159.0 to 157.1. Balsam Peru, glycerine and menthol were lower.

Prices quoted in this section were current on the first of this month.

CACHALOT®
fatty alcohols

There are good reasons why chemists have specified Cachalot brand fatty alcohols for over twenty years.

For one, Cachalot specifications are held to such close tolerances that you don't have to worry about formula adjustments with every lot.

Then, Cachalot technical, USP, and NF grades are available in great enough variety that you can get the exact combination of properties you need for your special use.

In fact, you may even buy Cachalot fatty alcohols made to your order.

Write today for the interesting reprint of the Cachalot listing in Chemical Materials Catalog.

M. MICHEL AND COMPANY, INC.
90 BROAD STREET • NEW YORK 4, N. Y.
since 1926 basic suppliers to chemical manufacturers and distributors
cetyl, oleyl, stearyl: USP, NF & technical

How to produce more popular products

Always remember—
Never forget

NORDA MAKES GOOD SCENTS

Come to Norda if you want to make good scents pay off. Norda knows your needs. Norda scents make sales. Write today, right away, for free samples and catalogue.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y.
CHICAGO LOS ANGELES ST. PAUL MONTREAL
TORONTO HAVANA MEXICO CITY
LONDON PARIS

Greeff

ESTROGENIC SUBSTANCE

In oil solutions and crystalline form

R. W. GREEFF & CO., INC.
10 ROCKEFELLER PLAZA, NEW YORK, N. Y.
TRIBUNE TOWER, CHICAGO, ILLINOIS

PUNCHES and DIES

IMMEDIATE DELIVERY
ON MOST STANDARDS
•
4 to 5 WEEKS DELIVERY
ON SPECIALS
•
ARTHUR COLTON COMPANY
Div. Snyder Tool & Engineering Company
3446 E. LAFAYETTE • DETROIT 7, MICHIGAN

Menthol Continues Downward, Brazil Production Is Expected To Exceed 1951 Total; Cuba May Face Storage Problem in Molasses

The downward swing in menthol persisted last month and found the price for the Brazilian material at $7.50, with the Chinese being quoted at $8.25. From all indications, the price is going to continue on this tack, since some spokesmen have suggested the price from Brazil in some instances has gone down to $7. Demand for the item picked up in February slightly, but not anywhere as much as had been expected, judging from past years at this same time. The sluggishness has been attributed generally to the fact that consumers still have large stocks on hand left over from the previous year's market. These users, furthermore, appear to be delaying any replacement activity as long as possible in order to wait for lower prices. Under these circumstances, there may be a reversal during the next month or two when these consumers deem it wise to re-enter the replacement market and buy heavily.

Brazil's current production is expected to more than double that of last year's, one reason having been attributed to a new type of mint plant that has been developed. According to recent estimates, the new crop has been put at about 600,000 pounds of menthol, compared with about 275,000 pounds during the previous season.

In Japan the production may reach 400,000 pounds later this year, and may exceed 500,000 pounds by 1954, while the China production is reported to be approximately 300,000 pounds.

Carnauba Wax Unstable

The carnauba wax market was very unsettled last month, with reports to the effect that it could be had at a cheaper price on spot in New York than from Brazil as replacement material, and this situation occurs in spite of the fact that stocks in this country are way down.

The chief explanation for this development is simply that demand for the wax at the present time has been much lighter than normal.

Molasses Problem in Cuba

Out of a possible 320,000,000 gallons of blackstrap molasses, the Sugar Institute in Cuba has sold only about 9,000,000 gallons, and refuses to sell any material in the future at less than 20c a gallon. This is in opposition to the distillers in this country who are willing to pay up to 16c a gallon. There were reports late in the month suggesting that Cuba may send some molasses to New York to help relieve the impending storage problem there.

Gum Arabic Up 2c

Toward the end of the month Gum Arabic advanced 2c to 17c a pound, a change caused by higher freight rates, according to spokesmen, and other shipping charges.

The Alcohol Situation

General consumer interest in alcohol has increased a good deal since the price reduction in early January; however, there are several unknown factors present which may alter the adequate supply now on hand. Although the country's defense operations are constantly being enlarged, it is not yet known how much alcohol will be diverted to that channel, nor is it known how much alcohol will be needed during the year for the synthetic rubber program. These two factors will have decided effect on the market and will primarily determine how much will be left for the trade.

The following data on the supply, production, withdrawals, and stocks of denatured alcohol during the month of December, 1951, as compared with December, 1950, were released early last month.

Production

	——Proof gallons——	
	1951	1950
Ethyl	39,731,981	34,859,052
*Completely denatured	46,054	95,946
*Specially denatured	22,418,017	21,168,681

Withdrawals

	——Wine gallons——	
	1951	1950
†Ethyl, tax paid	2,416,652	3,034,633
tax free	52,932,579	47,982,312
*Completely denatured	40,948	89,891
*Specially denatured	21,933,015	19,798,507

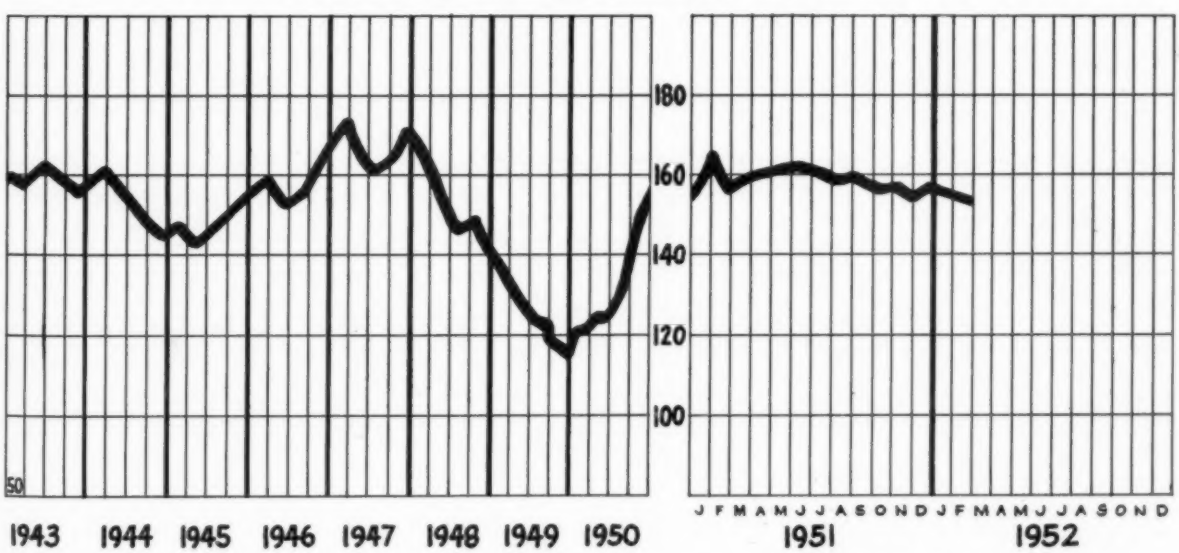
Stocks

	——Gallons——	
	1951	1950
†Ethyl	89,377,141	44,053,490
*Completely denatured	44,687	36,895
*Specially denatured	8,287,846	3,080,980

*Wine gallons. †Proof gallons

An important development in the rubber program, however, and one which will greatly affect the market, is the fact that the United States has made recent purchases of alcohol from West

50 Raw Materials—Weighted Price Index. 1926 = 100.



The price index of fifty commodities for February went down from 154.0 to 152.5.

February Price Changes

UP

Arabic Gum, Sorts, Amber 2c
Cananga Oil, Native 75c
Rectified $1.50
Cocoa Butter 7½c
Culvers Root 5c
Deer Tongue Leaves 5c
Digitalis Leaves 10c
Elm Bark 10c
Wahoo Bark of Root 15c

DOWN

Almond Oil, Sweet 10c
Apricot Kernel Oil 8c
Balsam Peru 20c
Cardamom Oil $5
Celery Oil $1
Citronelle Oil, Ceylon 25c
Java 35c
Cubebs Oil $1
Geranium Oil, Bourbon $6
Glycerine, C.P. 5c
Grapefruit Oil 20c
Horehound Herb 2c
Lemongrass Oil 5c
Menthol 95c
Mercury $3
Nutmeg Oil 35c
Passion Flower 5c
Patchouli Oil 75c
Sandalwood Oil $1.25
Thymol 10c
Vanilla Beans, Mex.
Cuts 50c
Whole 25c

Germany, including 3½ million gallons last month. The Reconstruction Finance Corp., moreover, has obtained a large amount of the alcohol from flood-damaged corn in this country, amounting to about 30 million gallons. These two sources, according to the government, will furnish the RFC with enough alcohol to satisfy its synthetic rubber operations until July or about the middle of this year.

Vanilla Beans Reduced

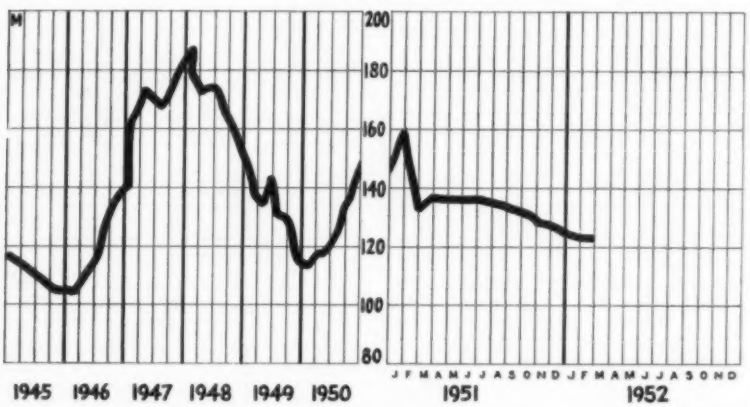
(*Continued from page 395*)

rent stocks before new-crop beans arrive on the market. Some quarters indicate that the new Mexican crop will be smaller than last year's which amounted to 250,000 pounds. The current estimation is in the vicinity of 200,000 pounds. The same is also true of the bourbon beans, in which present estimates put the new crop at about 150 tons as contrasted to the 250-ton crop of the previous year.

In view of the expected smaller crops, there is some speculation that the price may turn upward in a few months if the supply of beans becomes less, and the demand increases now that the prices are at such a low level.

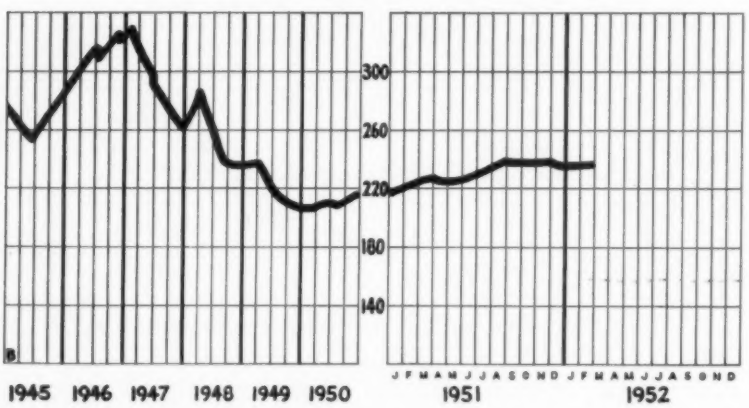
The Mexican beans were reduced to $3.75 for the cuts and to $4.75 for the whole ones, a factor which draws these prices nearer to those of the Bourbon variety ($3 to $3.25).

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100



The medicical chemicals index fell off from 126.5 to 126.2. Menthol and mercury were lower.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index went up slightly from 238.9 to 239.2. Digitalis was higher.

Sandalwood Oil Lower

Sandalwood oil dropped from $12.25 to $11 in February in the face of little consumer interest. More than enough oil was on hand by the end of the month and the price extended up to $12.

A forerunner of this drop in price was probably the decline in Indian lemongrass oil which took place in December, 1951. At that time, the market quotation for the oil in Cochin, India, was 130 rupees ($27.30) per dozen bottles of 22 ounces each. The quotation in December, 1950, was $55.73 for the same quality oil.

Sage Oil Steady

This oil remained at about $11.75 for the Dalmatian type and at $1.25 for the Spanish, according to dealers. Spokesmen indicated that stocks at the origin are all under contract, leaving no available oil as replacement. In spite of this condition, it is believed that ample oil is available on spot to handle demand through the autumn when a new crop will arrive.

Pennyroyal Oil Unchanged

Although most dealers quoted pennyroyal oil between $3.60 and $3.85, a few were said to be offering it at prices nearer $3. There was not very much interest in the market last month, and although, replacements were not very plentiful, it was still fairly easy to obtain on spot.

Peppermint Reported Higher

There were no price changes in peppermint oil during the month, but some dealers offered the opinion that shippers were beginning to quote higher figures. The natural oil still ranged between $7.25 and $8, and the redistilled oil, from $8 to $8.50.

Citronella Oil Plentiful

Emphasizing the plentiful supply of citronella oil on hand, the price of both the Ceylon and Java material went down last month, the former ranging between $1.15 and $1.30, and the latter, 95c and $1.25.

Cubeb Oil Down $1

This oil was selling at $5 a pound in some quarters last month, which represented a drop of $1 under that of the previous month. There was not much interest in the oil, and there was enough material on hand to last well through the first half of the year.

Geranium Oil A Little Lower

Most dealers were quoting geranium oil at still-high prices. African material last month ranged from $22.50 to $27.50, and the Bourbon which was more plentiful, was down to $15 on the lower side of the range. At the time there was little call for the oil which fact resulted in a favorable spot supply situation, especially since replacements from the origin were fairly easy to obtain.

Anise Oil Quiet

There was no change in the anise oil price from the previous month's range extending between $1.75 and $2.00, although there were reports circulating toward the end of February to the effect that lower prices were being offered in segregated cases. There is sound reasoning behind this development, since dealers reported they had more than enough material to go around, but consumers seemed to be more interested in the cheaper anethol. There was hardly any material at all coming in from China during February, and replacements from that source were said to be at a virtual standstill.

Bergamot Oil Unchanged at $15

While there was still no news from the Italian Consortium on the prospects of deliveries to this country, consumers last month were showing more interest than before in the artificial oil, priced at about $1.65 for the lower grades and $2.20 for the upper range. If the natural oil remains at the high figure of $15 to $16.50 for much longer it is very probable that these consumers will depend entirely on the artificial oil. By the end of February there was just about no oil at all in the spot market, and the immediate future showed no signs of relief from the situation.

Cananga Oil Up

Both the native and rectified were higher last month as a scarcity persisted in the item and consumer interest continued at a low level. The native oil was being quoted from $1.75 to $11.15, marketing a 75c increase over that of January, and the rectified was up $1.50 to the range between $13 and $13.50.

Cardamom Oil Down

Most sources were quoting cardamom oil at $60 on the inside and $85 at the upper end of the range, but a few were selling it for $55.

Grapefruit Oil Difficulties

One dealer was quoting this oil at $2.05, and others indicated a higher price ranging between $2.50 and $3. Reports from the source indicated that replacements were almost impossible to obtain at the present time. This reflected on spot conditions. The entire citrus market is expected to become tighter in the next few weeks and months with the advent of Spring.

Clove Oil Still Critical

With most prices on clove oil merely theoretical and most stocks entirely gone, dealers had very few stocks on hand, and those who had the least bit were far from anxious to sell any. Spokesmen indicated that there was very little material on hand at the source as carryover, and although the new crop had not arrived yet, it was expected to be on the small side this year. When any prices were quoted, they ranged around $6 and were usually nominal, having no real meaning. This oil is becoming increasingly more difficult to obtain on spot, and the situation was termed critical in some quarters.

Lemon Oil Still Firm

Conditions in both the domestic and foreign lemon oils indicate a firm outlook in the next few months. The California oil is now being quoted as high as $5.75 for the minimum, and up to $6, while the Italian oil, when it does appear, has been selling between the range of $5.50 and $9. Shipments of the lower priced Italian oil have been diminishing, and offerings from that source have shown a paralleled decrease, with the result that just about the only offerings out of Italy have been for the high-priced oil. As in the case of the grapefruit oil, this oil is expected to become even tighter in the next few months and the need for soft drinks and summer beverages increases.

Nutmeg Oil Improves

The price of nutmeg oil went down to $4.25 during the latter part of February, representing the West Indian oil, while the East Indian oil was at $3.75 in some quarters. The spot market was in a comfortable position, with enough oil on hand to satisfy consumers for many months.

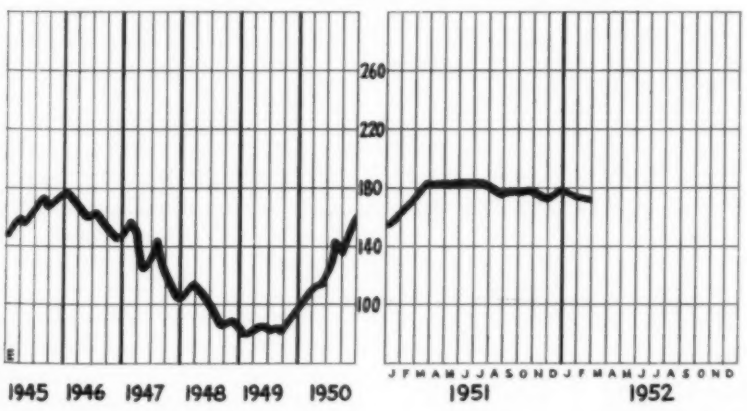
Orange Oil Shows More Strength

Both the Florida and California orange oils were established at $1.75 on the inside prices, and although stocks were in a very comfortable position by the end of the month, dealers expected a tightening up in the next few weeks. In any event, there appeared to be more than enough material on hand to take care of all consumer orders.

Patchouli Oil Down

Little interest has been shown in patchouli oil recently, a fact which is being reflected in the reduced price which now stands at $9.25. Because there was much more than enough on spot, some dealers were almost willing to sell the oil at a loss in order to dispose of it.

15 Essential Oils—Weighted Price Index. 1926 = 100.



The essential oils index fell from 174.2 to 171.1. Cananga oil was higher; Citronella and sandalwood oils were lower.

PRIVATE LABEL

Especially Fine French Milled

TOILET SOAPS
SHAVE SOAPS

Special Formula

DEODORANT
and
MEDICATED SOAPS

REINITZ SOAP CORP.
36-14 35th Street, Long Island City 6, N. Y.
STilwell 4 7870-71

(*Continued from page 387*)

of comment that Zander felt that the use of the penicillin dentifrice did not lead to the development of penicillin resistance on the part of the oral flora. He also concluded that the penicillin dentifrice did not produce allergy or increased sensitivity to penicillin in those children who were not already sensitive to the drug. Needless to say, this is an important consideration.

In recent studies, Fosdick and co-workers of Northwestern University Dental School found that a penicillin-containing dentifrice was effective in reducing the *Lactobacillus acidophilus* count of the saliva. Other antibiotics tried, including streptomycin, bacitracin, tyrothricin and gramicidin, had little or no effect.

In reviewing the evidence available thus far, what conclusion can we reasonably be permitted to draw at this time? It seems relatively safe to say that the use of penicillin-containing dentifrices appears to be a rather promising method for controlling this widespread disease. In arriving at this tentative conclusion, however, it should be emphasized that if a penicillin dentifrice is to be effective, it must be used consistently and conscientiously. Quite probably the occasional or haphazard use of such a dentifrice would not lead to significant results. Of course this statement is probably applicable to any other method or type of therapeutic dentifrice as well.

One other type of therapeutic dentifrice which has been proposed for the control of dental caries is that containing water-soluble chlorophylls. In view of the fact that another speaker on this program is to discuss the topic of the medical uses of chlorophyll, no attempt will be made by the present speaker to discuss this problem, and thereby run the risk of usurping his subject.

Let us pass on then to the final method which is to be discussed, and one of the older and perhaps most promising of all methods for controlling dental decay, i.e., the use of the inorganic compounds of flourine. Probably no topic in the field of dental research has received greater attention on the part of more investigators than this very interesting subject. Due to the restrictions imposed by time, it is hoped that you will pardon the necessity for omitting many stimulating phases of this subject in the interest of confining our attention to some of the more interesting facets of it. The history of this subject goes back to the last quarter of the 19th Century, at which time one may find referlences in the literature speculating on a fluorine-dental caries relationship. It remained, however, for the monumental work of Dr. H. Trendely Dean and his group of dental investigators at the National Institutes of Health to bring this problem into proper focus. The contributions of this group served as a stimulus for most of the other significant investigations carried out throughout the world on this intriguing problem. This group made a rather systematic survey of the communal water supplies of a number of cities throughout the United States to determine which of these naturally contained fluoride. This was then followed up by a

survey of the caries incidence of the inhabitants of some of these communities in comparison with other comparable centers of population in which the drinking water was free of fluorine. The results of these surveys indicated in a very convincing way that the presence of fluoride in the drinking water could be correlated uniformly with a reduced incidence of dental decay. Examination of the large body of data obtained also made it possible to arrive at the conclusion that certain optimum concentrations of fluoride in the drinking water could effectively reduce the incidence of dental caries without, at the same time, producing the brown stains and mottled enamel that higher concentrations of fluoride are known to produce. Specifically, it was found that fluoride concentrations of 1 to 1.5 parts per million were capable of reducing significantly the caries exprience, whereas significant amounts of mottled enamel or brown staining did not occur until the fluoride concentration in the water exceeded 2.5 parts per million.

After it had been demonstrated that natural fluoride-bearing waters were capable of extending considerable protection from dental caries, it immediately became apparent that very possibly ways could be found to extend this benefit to inhabitants of communities using fluoride-free waters. In general, there are two possible approaches which conceivably could be used to achieve this objective: (1) the local or topical application of fluorides to the teeth, and (2) the addition of suitable amounts of fluoride compounds to non-fluoride-containing communal water supplies. Each of these methods will be discussed in turn.

In the course of various investigations on the mechanism of action of the fluorides, it was found that the resistance to dental decay imparted by fluoride was principally the result of an increase of fluoride in the tooth structure, particularly the enamel. Special attention was directed to the fact that erupted teeth were able to combine directly with the fluoride coming into the mouth via the drinking water, thus increasing the fluoride content of the superficial layers of the enamel. The same phenomenon can be demonstrated very readily in the laboratory by immersing enamel in fluoride solutions and analyzing samples of the enamel before and after contact with the fluoride solution, when it is found that the enamel very readily takes up fluoride from the solutions in which it is immersed. This naturally led to the idea that it might be possible to produce an increase in the fluoride content of the enamel, particularly the external surfaces, by bringing them into contact with concentrated fluoride solutions by topical application. The results of many investigations in dental research laboratories in various parts of the country have adequately demonstrated the validity of this theory. The solutions that have been employed for this purpose have varied in concentration for the most part from 0.05 per cent to 2 per cent. The solution most commonly employed, however, is a 2 per cent aqueous solution of sodium fluoride. Other fluoride salts have also been employed,

see the FIRST

fully-automatic

GRAVITY-VACUUM FILLER

designed for accurate high-speed filling of

PLASTIC CONTAINERS

•

Booth 227-231

Packaging Exposition
Atlantic City

April 1-4, 1952

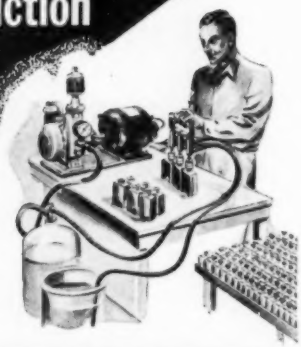
•

FIRST BUILT-STILL FIRST

HORIX MANUFACTURING CO.
PITTSBURGH 4, PA.
FILLERS AND CONVEYORS

ERTEL BOTTLE FILLERS MEET DEMAND FOR 40-80 BOTTLES PER MINUTE, and

Materially lower Your Production Filling Costs



ERTEL PORTABLE FILLER

This Vacuum Bottle Filler belongs in every plant. Fills batch or sample lots of materials at lowest cost; for small operations where large expensive equipment is not practical. Fully automatic overflow—no drip spouts. Instantaneous flow — won't fill defective or cracked bottle.

ERTEL ESA FILLER FOR SMALL BOTTLES

The most practical filler for small bottles in quantities of 40 to 60 per minute. To appreciate this unit it should be viewed in operation — the finest low cost trouble-free unit on the market.

ERTEL PNEUMO-VAC FILLER
Filling Range 3" to 13" High Bottle

For speeds up to 40 quarts per minute, this precision Ertel filler has no equal. New type spouts positively prevent drippage. Available with circulatory passages either bronze, plated, or stainless steel. Adjustments are simple and require but a few seconds time. If you have a filling problem see the Pneumo-Vac — it's designed for low cost operation.

Ask to have an Ertel representative show you why Ertel Fillers are so enthusiastically acclaimed by users in the pharmaceutical, drug, cosmetic, chemical and food industries.

ERTEL ENGINEERING
CORPORATION
KINGSTON 1, NEW YORK
Branch Office & Showroom Located in New York City
COMPLETE LINE OF
Liquid Handling Equipment

ERTEL

but at this time there is no reason to believe that any of them are superior to sodium fluoride, although recent investigations at the University of Indiana Dental School suggest that perhaps stannous fluoride may be somewhat superior for this purpose. With very few exceptions, practically all the studies carried out on the topical application of fluoride indicate that there is some reduction in the incidence of caries following such treatment, although the percentage reduction varies from one investigator to the next. These discrepancies are probably due to differences in the technique employed for applying the solutions.

On the basis of the evidence available thus far, the following considerations should be taken into account. In the first place, to be most effective, the application of fluoride to the teeth should be preceded by thorough prophylaxis. Secondly, the teeth should be isolated with cotton rolls or by other suitable means so as to keep them perfectly dry during the treatment period. A 2 per cent aqueous solution of sodium fluoride is probably the one of choice. This solution should be applied to the dry, clean teeth and allowed to remain in contact with them for a minimum of three to four minutes. The number and spacing of the applications is a problem which has not been completely worked out. Probably a minimum of four applications should be made at, say, intervals of once a week; to maintain as complete protection as possible it is probable that this should be followed up with an occasional application at intervals of three to six months. Under these conditions, a reduction of the incidence of caries up to 40 per cent should be anticipated. These figures, however, should be, for the time being at least, restricted to the younger age group, since it has not been adequately demonstrated that the topical application of fluorides to adults is equally effective. In fact, there is some evidence that this is not the case. However, it remains for future studies to settle this point.

The final topic which we shall discuss deals with the problem of adding fluorides to public water supplies. This problem has been studied *in extenso* by the National Institute of Dental Research of the National Institutes of Health. Based on a tremendous body of evidence, it is now their considered opinion that under optimum conditions the incidence of dental caries in childen can be reduced by as much as 65 per cent by the addition of fluoride to the community water supply. This method of combatting dental caries has been endorsed by the American Dental Association, the State and territorial health directors, the American Association of Public Health Dentists, the Public Health Service of the Federal Security Agency, the American Public Health Association and the American Waterworks Association. As of this date, there are more than 60 cities which add fluoride to the public water supply. It is interesting to note that 42 of these are in the State of Wisconsin. Other cities include Grand Rapids, Michigan; Gainesville, Florida; Evanston, Illinois; Newburgh, New York; Wheeling, West Virginia; Sheridan, Wyoming; Aberdeen, South Dakota;

New Britain, Connecticut; Ottawa, Kansas and others. Thus it can be seen that there is a very good geographic distribution of the various cities throughout the United States which are following this practice at the present time. Just recently, Los Angeles, California, decided by public vote to add fluoride to the public water supply.

Probably the compound most often employed is sodium fluoride, although other fluorides such as sodium fluosilicate and hydrofluosilicic acid are also recommended. Normally, one part of fluoride to one million parts of water is the concentration which should be maintained. This may be subject to slight variation on a seasonal and area basis. Equipment is available for feeding the appropriate amount of fluoride compound into the public water supplies. Some of these are equipped with automatic controls. The cost of adding fluoride to the public water supply, according to the United States Public Health Service, is very small, ranging from 4c to 14c per person per year. In view of the fact that the incidence of dental caries may be reduced as much as 65 per cent by this method, one can hardly help but agree that the returns on the small investment required are exceedingly large. It should be pointed out that in order to gain the full benefits of fluoridated water, the children must drink it during the formative period of the teeth, which is from birth to about eight years of age. Children who are older than this at the time fluoridation begins are stated to receive some protection against dental decay but not as much as the younger children. However, it is worthwhile pointing out that protection gained during this period of 0 to 8 years is a permanent one, and even though the child moves after this age to another community where there is no fluoride in the water supply, the protection provided against caries is not lost. This addition of fluoride to the water does not in any way affect its taste, color, odor or hardness.

The use of fluoridated waters at the recommended level of 1 to 1.5 parts per million do not seem to subject the inhabitants to hazards of any kind. One of the first symptoms that develops when waters containing excessive amounts of fluoride are used is the occurrence of brown stains or mottled enamel on the teeth. At the recommended level this does not occur, and is seldom seen until the concentration of fluoride exceeds 2.5 parts per million. In many regions of the United States, people are using waters which naturally contain 8 to 15 parts per million, which is many times the concentration recommended. Inhabitants of these areas have not demonstrated any detrimental effects of this amount of fluoride other than staining and mottling of the enamel. Since fluorides seem to have a predilection for being stored in the calcified areas of the body, one might expect some alteration in the skeletal system if toxic amounts of fluoride were consumed; in areas which contain 4 to 5 parts per million of fluoride in the drinking water naturally, the incidence of bone fractures was no greater than in areas where fluoride does not occur in the water. This suggests, therefore, that there is no skeletal damage of

How to produce more popular products

Always remember—
Never forget

NORDA MAKES GOOD SCENTS

Come to Norda if you want to make good scents pay off. Norda knows your needs. Norda scents make sales. Write today, right away, for free samples and catalogue.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y.
CHICAGO LOS ANGELES ST. PAUL MONTREAL
TORONTO HAVANA MEXICO CITY
LONDON PARIS

BOTTLES, JARS, CANS, CONTAINERS
Get a Smooth Ride
ON THE SANITARY
Styl-O-Matic CONVEYOR

NO SPILLAGE
NO BREAKAGE

They ride "like a dream" on the smooth table-top surface of the #815 Rex Chain . . . with no rough or high spots to cause spilling or breaking. And there are no "pockets" to encourage bacteria growth! Available in steel or stainless steel in any length and three standard widths. Sturdily built for years of trouble-free use. Easily installed and serviced.

Carries your products safely and smoothly in a single file through various stages of your production line, such as filling, capping, labelling, etc.

FREE!

MAIL THIS COUPON FOR FULL DETAILS

ISLAND EQUIPMENT CORP. Dept. DC3
27-01 Bridge Plaza North
Long Island City 1, N. Y.

Sounds interesting. Send me full details on your No. 815 Bottle Conveyor and a copy of your Styl-O-Matic Catalog.

COMPANY.....
NAME.....
ADDRESS.....
CITY.....STATE.....

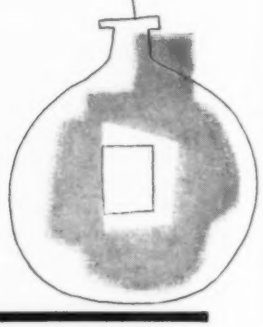
another

EASTMAN

aromatic

COMPOUND 77-B

Providing soap and perfume manufacturers with a distinctive new odor, somewhat reminiscent of oil of patchouli and oil of verti vert.



WRITE FOR YOUR SAMPLE

TENNESSEE EASTMAN COMPANY
Chemical Sales Division, Kingsport, Tennessee

Please send me prices and a sample of your new COMPOUND 77-B.

NAME_____ POSITION_____
COMPANY_____
CITY_____ ZONE_____
STATE_____

consequence in areas where the fluoride content is three to four times that required for protection from dental caries. It is true that occasionally one might find in the literature an article which condemns the use of fluorides in the drinking water. It is the opinion of the speaker, however, that these are emotional outbursts based on ignorance or prejudice, and not based on a consideration of the vast body of experimental data at hand. It seems safe to predict that the practice of adding fluorides to the public water supply is something that will undoubtedly increase tremendously during the decade ahead.

Differences in Skin Surfaces

(Continued from page 331)

least oily skin with a grade of 0 to the oiliest condition we have experienced, which has been assigned a grade of 4. Since our studies have included women of all ages, we have broken this classification down into three groups: the young group, ages 15-17, the middle age group, 30-45, and the senile group, around age 60. The variance in oiliness of the skin is shown by the degree of sheen. The depth or darkness of color of the photographs does not indicate the degree of oiliness, but only a variation in the photographic technique. It is also interesting to notice the difference in size of the pores and that they seem to be fairly constant for any one age group (Figure 5). In young skin the pores are small but perceptible; in the middle age group the pores become larger and more prominent, and in senile

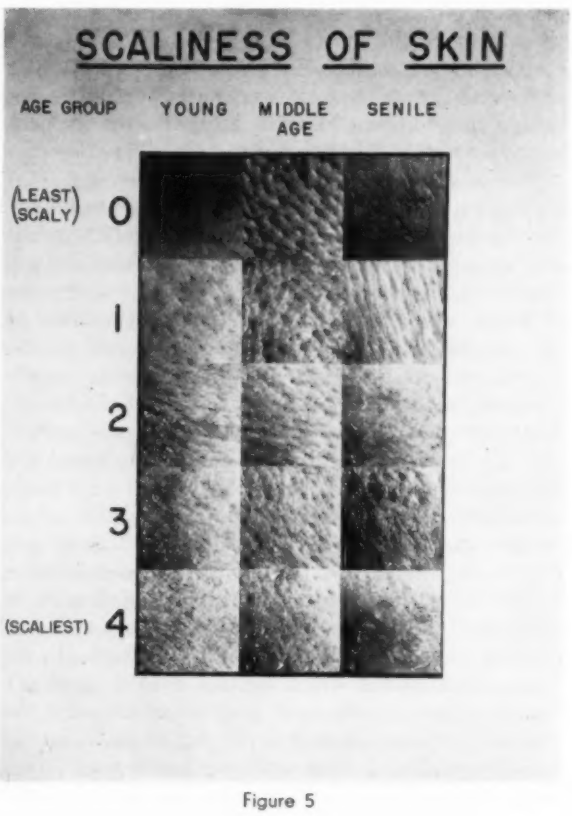


Figure 5

SCALIEST SKIN

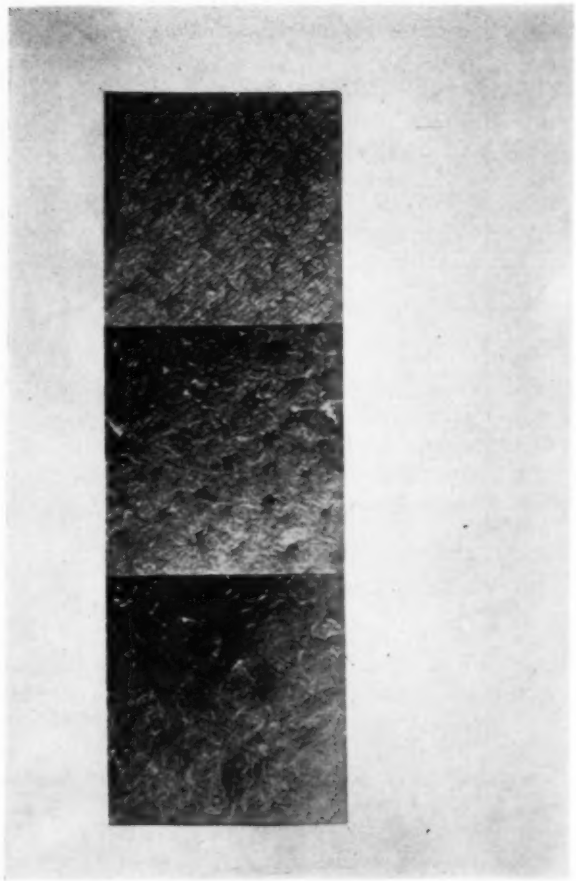


Figure 6

group the skin is generally flat because the pores are not as noticeable.

A similar chart has been made for the scaliness of skin with a grade of 0, indicating no scaliness, and a grade of 4, the most scaliness.

The scales of the skin also have different characteristics by age groups which appear to be related to the appearance of the pores in the skin. The young skin has small flaky scales; the scales of the middle age become larger and more noticeable as do the pores, and in the senile skin, where the surface is fairly flat, the scales are large and sheetlike in appearance (Figure 6).

These charts serve a very important part in familiarizing observers with the range of skin conditions they are likely to encounter. They are intended as aids in fundamental evaluations of skin scaliness and oiliness. They aid in reproducibility of results from one set of observations to the next and from one observer to another.

These procedures and techniques have enabled us to collect more reliable data, more quickly, more efficiently, and have resulted in less costly studies. In addition, we have a permanent reference to the study that will permit interpretation of general trends that were observed during the study.

ONE OF THESE 3

WORLD

LABELERS

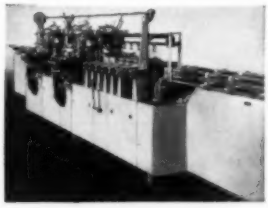
IS

Which one, in your case, depends on

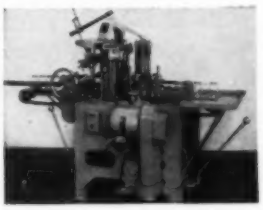
your production needs
your label types and sizes
your glass container shapes and sizes

Once we have the story we are in the world's best position to recommend the best Labeler in the WORLD, because no one else makes such a complete range of Semi-Automatic and Full Automatic Labelers.

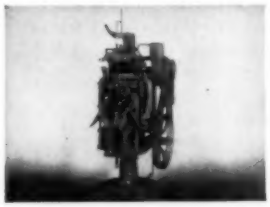
Whatever your label application problem put it up to us to demonstrate which one of these three is the best Labeler in the World for *you*.



WORLD BEE-LINE



WORLD TURRET



WORLD MODEL "S"

SEE THE WORLD
AT BOOTH NUMBERS 705-706
Packaging Exposition—Atlantic City

ECONOMIC MACHINERY CO.
WORCESTER 3, MASSACHUSETTS
DIVISION OF GEO. J. MEYER MANUFACTURING CO.
MILWAUKEE, WISCONSIN
New York • Philadelphia • Pittsburgh • Chicago • San Francisco • Los Angeles
Denver • Louisville • Salt Lake City • El Paso • Seattle • Portland • Phoenix
London • Montreal • Toronto • Winnipeg • Newfoundland • Vancouver
Mexico City • Sydney, Australia • Wellington, N. Z. • San Juan, P. R.
Ciudad Trujillo, D. R. • Honolulu, T. H.

The Evaluation of Odors and Flavors

(*Continued from page 333*)

samples A and B, and two more samples A and B, which are to be compared to the first two samples. As there are two possible answers, B-A and A-B, only one of which is correct, chance probability of the judge being correct is clearly one-half. The same holds true for the Duo-Trio Test, which is perhaps intermediate between a theoretical A-B and an AA-B test. Again the judge can be either right or wrong, the probability of a correct answer hence again being one-half. For the Triangle Test (AA-B), the probability that the judge will make the correct selection by chance is one-third. This follows directly from the fact that of the three possible answers, AA-B, AB-A, BA-A only one, namely AA-B is correct.

These test systems would have to be expanded, of course, depending on the level of significance required.

Binomial expansion of the expression $(p+q)^n$ based on the theorem:

$$(p+q)^n = p^n + np^{n-1}q + \frac{n(n-1)p^{n-2}q^2}{2!} + \frac{n(n-1)\ (n-2)p^{n-3}q^3}{3!}$$

$$\ldots . + npq^{n-1} + q^n$$

where $n! = /n = 1 \cdot 2 \cdot 3 \ldots . (n-1)n$, is explained more clearly by a simple example:

Assuming 3 judgments (n = 3), and two samples being judged each time, the above theorem bcomes:

$$(p+q)^3 = p^3 + 3p^2q + 3pq^2 + q^3.$$

If p = probability of success = ½.

q = probability of failure = ½.

then $(p + q)^3$ becomes:

$(\frac{1}{2})^3 + 3(\frac{1}{2})^2(\frac{1}{2}) + 3(\frac{1}{2})(\frac{1}{2})^2 + (\frac{1}{2})^3 = \frac{1}{8} + \frac{3}{8} + \frac{3}{8} + \frac{1}{8}$, which, when stated in words means,

1 chance in 8 that all three judgments are correct,

3 chances in 8 for one error,

3 chances in 8 for two errors,

1 chance in 8 for three errors.

To avoid fatigue of the observer and the difficulties of having to set up extensive series of samples in order to obtain significant results, a strictly limited number of samples are presented several times not to one judge, but to a sensory panel.

Selection of the Panel

For our purposes it was decided to select the sensory panel on the basis of observer socres in a number of Triangle Tests. Over fifty persons were tested and the sixteen scoring highest were chosen, taking those tests into consideration where the significance level was less than 5 per cent. Tests in which more than 95 per cent correct answers were given were discarded because the difference between the two samples was too obvious. Scoring was based on approximately twenty-four sets of samples tested. The significance level ratings were taken from a table of probability values that was calculated by Roessler,[14] using a formula which he derives as follows:

For a Traingle Test it has been shown that p = probability of guesssing right = ⅓, and q = the probability of guessing wrong = ⅔. By chance alone the number of correct answers would be $\frac{n}{3}$, of wrong answers $\frac{2n}{3}$. The standard error of distribution would be $\sqrt{npq} = \frac{\sqrt{2n}}{3}$. If y denotes the observed number of correct answers, the normal deviate (applying the Yates correction for continuity) then is:

$$\frac{y - \frac{n}{3} - 0.5}{\frac{\sqrt{2n}}{3}}$$

At a 5 per cent, 1 per cent, and 0.1 per cent level of significance, the value of the above ratio becomes 1.96, 2.576, and 3.291.

After these ratios have been calculated from the above formula, the equations

$$\frac{y - \frac{n}{3} - 0.5}{\frac{\sqrt{2n}}{3}} = 1.96,$$

$$\frac{y - \frac{n}{3} - 0.5}{\frac{\sqrt{2n}}{3}} = 2.576$$

$$\frac{y - \frac{n}{3} - 0\,5}{\frac{\sqrt{2n}}{3}} = 3.291$$

can be set up and solved for y, giving:

at the 5% level: $y = \frac{n}{3} + 0.5 + 0.9239\sqrt{n}$

at the 1% level: $y = \frac{n}{3} + 0.5 + 1.214\sqrt{n}$

at the 0.1% level: $y = \frac{n}{3} + 0.5 + 1.551\sqrt{n}$

From these relationships the table can be derived conveniently for any number of observations desired.

For greater accuracy, the National Bureau of Standards has published tables[15] that can be applied to data derived from tests based on binomial systems.

Evaluation of Odors

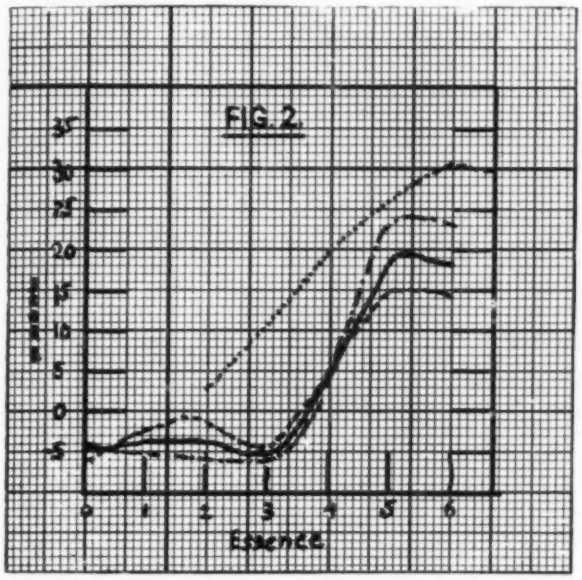
With this description of sensory testing by the panel-technique in general and of the selection of the panel for our work, it now is possible to discuss some of the work we have done in the field of odor and flavor evaluation. Odors have been judged both by the Triangle Test and on a judgmental rating scale.

I. By a Rating Scale

By a rating scale, the acceptability of the perfume added to a cleanser was evaluated both with respect

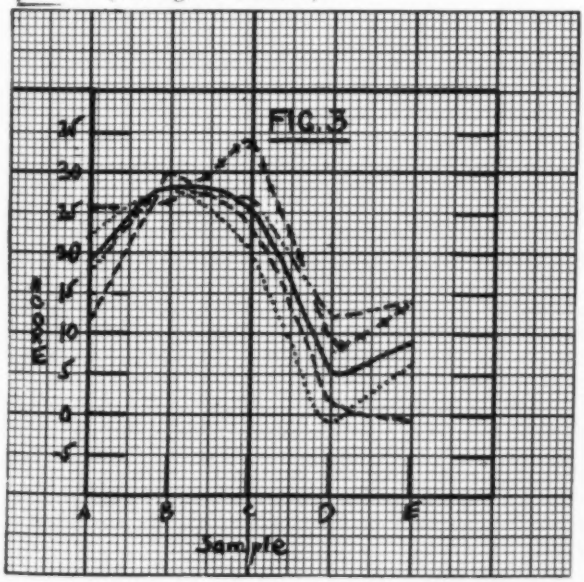
to the amount and the type of essence used. An arbitrary seven-point double-rating scale, ranging from 3 (very pleasant) to –3 (very unpleasant) yielded significant results.

The product was sensory tested by a twenty-member

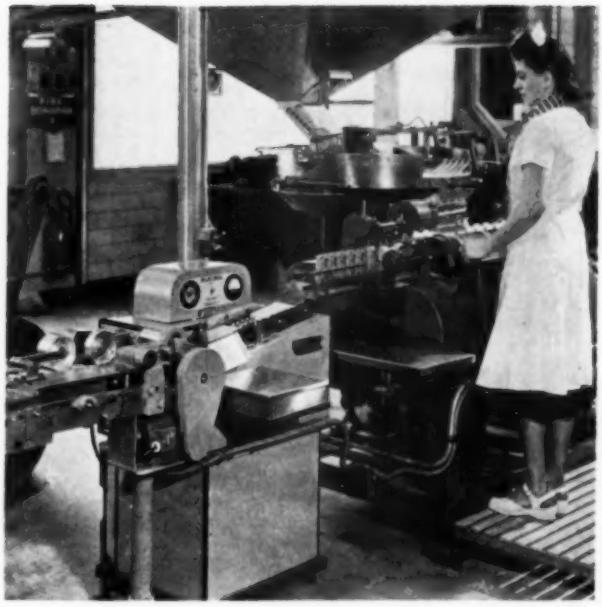


panel as a dry powder at room temperature and as a hot (130°F) aqueous suspension, because it is used both ways. Three to six samples were presented at each session and results were evaluated without elaborate statistical analysis.

It was found that the panel could differentiate consistently and state their preference between samples in which the perfume content of dry powder varied by as little as 0.01 per cent in the range from 0 to 0.1 per cent (see Figures 2 and 3).



A similar program was conducted on the evaluation of a number of commercial and experimental imitations of an important flavoring material. They were compared with the natural product as the standard, using



Exact Weight "Selectrol" (fully automatic) checkweighing cough drops on a high speed production line. Packages are selected for underweight, overweight and EXACT WEIGHT. Here is your answer to manpower shortage and lower cost volume drug and cosmetic packaging.

Save a Business Life — Yours!

A critical need exists for higher productivity and better cost and quality control to offset steadily rising costs, sharp competition and flimsy profit margins and the need is urgent. Better planning and equipment is needed. High on the priority list of equipment are scales . . . *the right kind in the right place,* for good scales are the very heart of any processing and packaging operation from precision ingredient compounding to final checkweighing of the finished packaged goods. No operation today can stand a loss due to failure in ingredient compounding from laboratory procedure through large scale production. No operation can absorb packaging shrink from bulk to finished product. You cannot package even a part of those already paper thin profits now. From raw materials to shipping docks alert engineers are pin pointing every spot where adequate weighing units will save money, increase productivity and speed up operation. Savings business lives today is a very active engineering job and no division of EXACT WEIGHT Scales is busier than our own engineering department. Why don't you avail yourself of this know how for your business.

"Sales and Service from Coast to Coast"

EXACT WEIGHT SCALES

Industrial Precision

THE EXACT WEIGHT SCALE COMPANY

935 West Fifth Avenue, Columbus 8, Ohio

2920 Bloor St., W. Toronto 18, Canada

when you buy
Chlorophyll...
buy *AMERICAN*

We are the world's largest producers of Chlorophyll, Carotene, and Xanthophyll. We are continually expanding our capacity to meet the increased demand for Chlorophyll.

PRODUCT OF A C I
REG U S PAT OFF

AMERICAN CHLOROPHYLL INC.
"Serving You Since 1933"
LAKE WORTH, FLORIDA

NEW YORK OFFICE: 745 FIFTH AVE., TEL. PLAZA 3-3587

APCO keeps *Your* Name on the Buyer's Desk . . .

IF your buyers' "point-of-purchase" is their desks, APCO's popular combination Memo Holder and Desk Name Plate will always keep your name in front of them! Handsomely made of heavy amber plastic, it carries *your name* on the top lip and the buyer's name on the front. Write today for free literature about this unique "reminder" advertising specialty—and other APCO point-of-purchase ideas in plastics. . .

ADVERTISING PLASTICS CO.
1926 L ST., N. W., WASHINGTON 6, D. C.
Displays - Replicas - Signs - Specialties

a four-point single-rating scale, the standard being the attainable maximum score. Agreement between observers on this test was fairly good, when not more than four samples were judged during each session. This test was further expanded in a novel way by requesting each panel member to state in terms of his own choosing, by what characteristics the imitation samples varied from the standard. One imitation, for instance, was thought to be less pleasant, less sharp, more fruity, more sweet, and more floral than the standard. Based on the analysis of the natural product and on these results, a list of characteristic notes was compiled and each new synthetic formulation is being evaluated by the panel with respect to the characteristics listed as compared to the natural product. We have gone even further than that by using results of sensory testing as a guide in the synthesis of improved imitation formulations.

II. By the Triangle Test

The price and sales appeal of intermediates for the perfume, flavor, and cosmetic industry often depends not only on chemical purity, but also on the odor of the product. The panel technique has shown promise in such quality control by comparing a new batch or a blend of batches with an acceptable sample. In our work, the Triangle Test has been used, the observers being asked to identify the odd sample. When results showed an insignificant difference after statistical analysis, the samples were considered to be of identical quality. Although, as has been stated before, it is not permissible to give any personal reaction to the sample as such, the test seemingly could be expanded to include a question on how the two samples differ. This may give the compounding chemist a valuable clue as to the improvement of his product.

The Triangle Test also has been used here to compare synthetic essential oils with a natural standard. This work still is in progress, however, and no definite conclusions as to whether or not the test will be useful can be drawn as yet.

Another interesting application of the Triangle Test was the selection of a natural flavoring material as the standard for our imitation flavors. It was rather surprising to find that the panel could differentiate at a significance level of 0.1 per cent or better between different species of the same genera and even between different harvests of the same species.

Evaluation of Flavors

Flavors have been judged in the same manner as odors, the only difference being in the preparation of the samples for testing.

All evaluations were conducted by the Triangle Test. Samples of flavoring material were presented to the panel either as an 0.1 per cent suspension or solution in water at a rate just above threshold perception. Imitation flavoring materials were compared with the natural product as standard. It was found that discrimination of the panel was poorer than when odors only were judged. In evaluating the same samples,

however, results of odor discrimination were comparable to those of flavor discrimination, but at different significance levels.

Statistical Analysis

The statistical evaluation of results from sensory testing by the triangular method has been described in the discussion on selection of our panel. Soundness of results is expressed as a level of significance.

The reliability of results by the panel was evaluated statistically by an analysis of variance, a method used successfully by Peryam[16] and his group in Chicago. The analysis is based on the F ratio.

Explanation of the theory of the analysis of variance is beyond the scope of this paper, but there are several excellent books dealing with this topic.[17-18]

The following is an example, however, of how the method can be helpful to us in our work. If it is assumed that 10 samples were judged 5 times by each observer (50 judgments), an analysis of variance can be run for each observer.

9	8	6	
8	8	6 x	= individual rating
7	7	5 T	= total judgments per sample
6	6	4 (Σx^2)	= all values added and squared
5	5	5	
—	—	—	

Σx^2 = each value squared and added

ΣT^2 = each value squared and added

The sum of squares (squares of variance) between columns and within columns then are calculated:

Sum of squares between columns: $\frac{1}{5}\Sigma T^2 - \frac{1}{50}(\Sigma x)^2$

Sum of squares within columns: $\Sigma x^2 - \frac{1}{5}\Sigma T^2$

based on the general expressions:

ss between columns: $\Sigma \frac{T_i^2}{r_i} - \frac{1}{N}(\Sigma x)^2$

ss within columns: $\Sigma \left[x - \frac{T_i}{r_i}\right]^2$

Where r_i = number of ratings for i^{th} sample

$N = \Sigma r_i$ = total number of ratings

T_i = total ratings for i^{th} sample

x = rating

Finally, to calculate a significance ratio, an F ratio—the ratio of the squares of standard deviation, here the ratio of variance between samples to variance within samples—has to be found.

	Sum of Squares	Degrees of Freedom	Variance
Between columns	A	9	degrees of freedom (9) / sum of squares (A)
Within columns	B	40	degrees of freedom (40) / sum of squares (B)

Huisking
IMPORT and EXPORT MERCHANTS
A Primary Source
Drugs, Chemicals, Vitamins, Oils
ESTABLISHED 1918

CAMPHOR USP *DUPONT*
QUININE & SALTS *BRAUNSCHWEIG*
SUGAR OF MILK USP AND COMMERCIAL
MENTHOL USP
BRUCINE SALTS
HYOSCINE HYDROBROMIDE
ATROPINE SULFATE
NAPHTHALENE
SULFUR PRECIPITATED
HAARLEM Oil
MAGNESIUM CARBONATE USP, BLOCKS
CHLOROPHYLL

CHAS. L. HUISKING & CO., Inc.
46 CLINTON AVENUE, BROOKLYN 5, N. Y.
Telephone: ULster 8-5800
Telegrams: HUISKING WUX, NEW YORK
London Agents: Wheeler & Huisking Ltd. 26 Great Tower St., E.C.3
Cables Huisking, New York

PEDER DEVOLD COD LIVER OIL USP
"The Bottlers Choice Everywhere"
ALL POTENCIES • STANDARDIZED
From Can to Carload Quantities

PEDER DEVOLD COD LIVER OIL USP, *Norwegian*
5 gal. cans, 30 gal. bbls., 30 gal. drums, and 50-56 gal. drums
Attractively lithographed 1 gallon cans.
PEDER DEVOLD COD LIVER OIL USP, High Potent
Available in all natural potencies.
DEVOLKOD ® COD LIVER OIL USP, *Non-Destearinated*
DEVOLD VITAMIN A & D FEEDING OILS
DEVOLKOD ® VITAMIN OILS (*Fortified Cod Liver Oils*)
DEVOLD VITAMIN A OILS
PEDER DEVOLD WHEAT GERM OIL
VITAMIN A & D CONCENTRATES
DEVOLD DRY D3 (A Feed Supplement)
CAROTENE CRYSTALS

PEDER DEVOLD OIL CO
DIVISION CHAS. L. HUISKING & CO., INC.
Telephone: ULster 8-5800
Cables: VITAMINE, NEW YORK
45 Clinton Ave., Brooklyn 5, N. Y.
Telegrams: HUISKING, WUX, NEW YORK

SANTONIN N.F. IX
Meeting Requirements of International Pharmacopoeias
ALKALOIDS of AMERICAN MANUFACTURE
SANTONINE COMPANY OF AMERICA
DIVISION OF CHAS. L. HUISKING & CO., INC.
45 CLINTON AVE., BROOKLYN 5, N. Y. Cable Address SANTONICUS, N. Y.

How to produce more popular products

Always remember—
Never forget

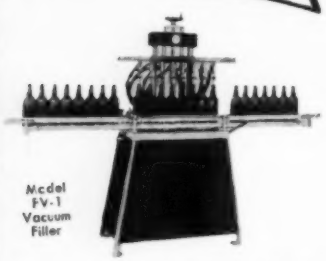
NORDA MAKES GOOD SCENTS

Come to Norda if you want to make good scents pay off. Norda knows your needs. Norda scents make sales. Write today, right away, for free samples and catalogue.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
601 West 26th Street, New York 1, N. Y.
CHICAGO LOS ANGELES ST. PAUL MONTREAL
TORONTO HAVANA MEXICO CITY
LONDON PARIS

PICK A PACKER AND SEE THE DIFFERENCE

FOR LOW COST FREQUENT CHANGE
LIQUID FILLING


Model FV-1 Vacuum Filler

FOR FOODS, LIQUORS, CHEMICALS, COSMETICS, DRUGS, SYRUPS, OILS

There is a PACKER Filler to satisfy your most complex filling requirements.

A partial list of PACKER-FILLER Users:
Socony-Vacuum Oil Co.
The Dow Chemical Co.
S & W Fine Foods, Inc.
Kinsey Distilling Co.
Reliance Varnish Co.
Procter & Gamble Co.

PICK A PACKER
LIQUID FILLING MACHINE

MODELS AVAILABLE FOR:
VACUUM FILLING
GRAVITY FILLING
COMBINED VACUUM AND GRAVITY OPERATION

BOTTLES • CANS • POLYETHYLENE Containers
—From Fractional Ounces to 5 Gallons—
Sturdy Construction • VERSATILE
FAST • ECONOMICAL

PICK A PACKER

SEND FOR FREE CATALOG V-12
PACKER MACHINERY CORP.
30 IRVING PLACE, NEW YORK 3, N. Y.

$$\text{F ratio} \quad \frac{\text{Variance between columns}}{\text{Variance within columns}}$$

The significance of F ratios can be determined by consulting the appropriate tables (for instance in "Methods of Statistical Analysis.")[17]

These complex figures can be made to yield more valid information by the methods indicated. To speed calculation and correlation of data, punched card systems and electronic calculators have been used successfully.

Applications of Sensory Testing by the Panel Technique

Many of our most useful oils, spices, and similar raw materials come from the Far East. Because of the unsettled conditions in that part of the globe, supply, quality, and price of these products fluctuate greatly. Such fluctuations place a heavy burden on the product control laboratories. In addition, other raw materials are in short supply because of military demands and substitutes have to be used. Evaluation of new sources of scarce materials and of substitutes in the odor and flavor fields is easily and quickly accomplished by sensory testing by the panel technique. A trained panel is able to differentiate significantly, for instance, between an essential oil that has been adulterated and one that has not. Panels, furthermore, have been used with good success in the evaluation of the effects of aging, packaging, and transportation of finished consumer goods. A trained sensory panel can determine with certainty whether printers' ink or cellophane used for packaging give rise to an off-odor, whether a cardboard container influences a delicate flavor, and whether careless handling in shipping has any untoward effects.

It also has been established that selected observers, trained to evaluate one product, frequently will be able to judge other products with equal efficiency. Furthermore, most persons highly sensitive to odors can discriminate between fine flavor and taste differences. General purpose panels thus could be developed.

We have been successful with our panel in several unrelated studies, both on odor and flavor. That sensory testing by the panel technique today is considered one of the best methods for the evaluation of odors and flavors can be gathered from the fact that the United States Government is using panel testing more and more as a standard method for the acceptance and general evaluation of aromatic and flavorful materials, such as foods and drinks purchased for the Armed Services.

For the average company concerned with odor and flavors, however, sensory testing could do more than merely check on raw materials and finished products. It is a distinct help in trouble shooting by acting as a screening agency on rejects and returns. A panel might determine whether a disputed sample differs even slightly from regular stock, and if so, where the fault lies. To judge whether a characteristic note is off balance, whether there is a factor missing or one too many, or whether there are off-odors or off-flavors, falls within the scope of panel testing.

In conclusion, one more function of panel testing, which might well be one of the most important ones, should be mentioned. This is the selection of a perfume or flavor to be added to a newly-developed product.

Although in some instances the executive vice-president or the chief chemist still makes the choice of the odor or flavor to be added to a product on the basis of personal preference or on what he thinks the consumers would like best, more and more organizations are coming to realize that only an integrated program of panel testing and consumer acceptance tests will allow them to make the best possible choice.

BIBLIOGRAPHY

1. Miles, W. R., and L. H. Beck, *Proc. Natl. Acad. Sci.*, 35:292-310 (1949).
2. Moncrieff, R. W., "The Chemical Senses," New York, John Wiley & Sons, Inc. (1946).
3. Foster, Dean, *Proceedings of the Toilet Goods Association*, No. 14, December, 1950, p. 30.
4. Middleton, J. W., *Ibid.*, p. 20.
5. Lauffer, P. G., *Proceedings of the Toilet Goods Association*, No. 11, May, 1949, p. 15.
6. Crocker, E. C., "Flavor," New York, McGraw-Hill (1945).
7. Cargille Scientific Incorporated, New York.
8. Peryam, D. R., D. V. Josephson, R. J. Remaley, and H. L. Fevold, *Food Engineering* 23: #8, 83 (August, 1951).
9. Cairncross, S. E., and L. B. Sjostrom, "Flavor Profiles . . . A New Approach to Flavor Problems," Presented July 13, 1949, Ninth Annual Conference of Institute of Food Technologists.
10. Cartwright, L. C., and P. H. Kelley, *Food Engineering* 23:#9, 71 (September, 1951).
11. Scofield, E. H., *The University and the National Restaurant Association Pamphlet* No. 25 (1948).
12. Helm, E., and B. Trolle, *Wallerstein Lab. Commun.* 9: (28) 181 (1946).
13. Lockhart, E. E., *Food Technology* 5: #10, 428 (October, 1951).
14. Roessler, E. B., J. Warren, and J. F. Guymon, *Food Research* 13:503 (1948).
15. "Tables of the Binomial Probability Distribution," National Bureau of Standards, Applied Mathematics Series No. 6.
16. Private Communication from Food and Container Institute.
17. Goulden, C. H., "Methods of Statistical Analysis," New York, John Wiley & Sons, Inc. (1939).
18. Youden, W. J., "Statistical Methods for Chemists," New York, John Wiley & Sons, Inc. (1950).

The Agar Industry of Today

(Continued from page 325)

the period between May and November when the water is warm and calm for longer periods.

After it has been collected the seaweed goes through a complicated mechanized routine of pressure cookers, stack driers, vacuum tanks, and drying tunnels during which the agar is extracted and prepared for the market. The product obtained is of the highest purity, which not even the Japanese attempt to excel. By the same token, however, the cost of equipment and the labor costs of the divers are so high that this American agar is much too expensive for general use.

During the war this expense was unimportant; today it is a major factor. There is a brisk, though limited, demand for this high purity American agar, and that is in bacteriological work as a culture medium for growing bacteria, in microbiology and in dentistry as a constituent for making dental plates. The Japanese realize the small scope of this particular market and have not attempted to compete with it.

In Japan, girls aged 17 to 20 dive for the seaweed in water from 15 to 40 feet deep using no special diving apparatus but a rubber mask. They seem to be able to withstand the cold better and hold their breaths longer than the men and are able to make up to sixty dives a day. Although they are paid almost twice as much as office workers, their fee is proportionately lower than that of the professional divers in America. Japan, moreover, produces a high-quality agar at a

KOMMON SCENTS!

Another Spring season is on the calendar and another Congressional unit is on the march with a tonic. The Delaney Committee is out to prove the Cosmetic Industry can stand more regulations. The Industry wonders whether it can survive them.

•

Trade mail is now evenly divided between old complaints from customers and new ones from Washington. Increased postal rates haven't discouraged the former nor increased resentment the latter.

•

Last time a Federal agency started out with fancy regulations—for agriculture—Uncle Sam wound up as the silent partner of screaming farmers. If the Delaney Committee succeeds nobody will be able to package lipstick, mascara or foot powder unless he has a Civil Service rating and a cousin in the local political clubhouse.

•

This is exaggerated. Things won't actually be that tough. Technically at least, there is a difference between being hit on the head by a 30-lb. hammer and a 50-lb. hammer.

•

On the eve of National Conventions the politicos appear to see a need to balance our domestic and military economics in terms the voters can't fail to understand:

"Keep your gun powder dry and your face powder pure!"

•

The objective is a commendable one. But hot air is a dangerous way to keep gun powder dry or cosmetics pure. For the former, the Government employs Ordinance specialists, for the latter they should try Cosmetics specialists.

•

There can be no serious objection to improving the quality of a product. But more bookmakers haven't improved the breed of racing horses and Congressional reports can't be used for attractive packaging.

George Fiedler

KELTON

Cosmetic Company

230 West 17th Street
New York 11, N. Y.

763 So. Los Angeles Street
Los Angeles 14, Calif.

Private Label Manufacturers Exclusively
Covered by Product Liability Insurance

Quality Products + Low Cost = Savoy

Private Formula • Tablets Coated-Uncoated • Powders • Liquids • Ointments • Bulk or Packaged • Drop Shipping

45 YEARS OF SERVICE TO THE TRADE

Modern facilities ... an up-to-date plant with the most advanced equipment

Skilled personnel ... our people are thoroughly experienced in all phases of drug manufacture

Engineered production schedule ... rigid scheduling enables us to fill orders faster

Central location ... shipments made in less time at lower freight costs

Rigid laboratory controls guarantee quality and uniformity
New product consultation available at no obligation

SAVOY DRUG & CHEMICAL COMPANY

Manufacturing and Custom Packaging

22 SOUTH PEORIA STREET • CHICAGO 7, ILLINOIS

VITAMERICAN OIL CORP

sulfacetimide

for triple sulfa mixtures combines

1. low cost **3. high therapeutic efficiency**
2. low toxicity **4. excellent tissue distribution**

Anhydrohydroxyprogesterone USP	Ethinyl Estradiol USP
Chorionic Gonadotropin	Methyl Testosterone USP
Desoxycorticosterone Acetate USP	Methylandrostenediol
Estradiol USP	Pregnenolone
Estradiol Benzoate USP	Progesterone USP
Estrogenic Substance	Testosterone USP
Estrone USP	Testosterone Propionate USP
Choline Bitartrate	Prophenpyridamine Maleate
Choline Dihydrogen Citrate	Pythalylsulfacetimide
Tri Choline Citrate	Sulfacetimide

A dependable source for hormones and fine chemicals.

Vitamerican Oil Corporation
1 John Street, Paterson 2, New Jersey

VITAMERICAN OIL CORP

VITAMERICAN OIL CORP

much lower price than this country because it depends on simpler equipment for purifying and processing the material. Its highest quality agar comes from Kobe, and second grade from Yokohama. Neither of these meets the U. S. product in extreme purity but far outstrips it in quantity. Still, the American Industry exists only by virtue of the fact that the Japanese have not attempted to compete with it. Japan could match the U. S. quality if it felt there was a large enough market for it. There is great demand for the Japanese product in many fields: in the bakery industry—because of its high water-absorption power—to prevent icings from becoming sticky in damp weather; in canning as a thickening and gelling agent for poultry, pickled tongues and softer types of meat and fish; and in the medical field as a bulk producer in overcoming constipation as well as in pill coatings to delay the release of the contents until the pill has passed through the stomach.

Some agar is available from other countries too but in lesser quantities. The United Kingdom has long experimented with it but is not producing it on a commercial scale because of the expense as compared with the cheaper Japanese product. New Zealand has a small industry, and this agar is mostly used locally, as in the case of Australia. China had a fairly large industry a number of years ago, but this has deteriorated since the war. All of these countries are potential sources and could develop their industries if the need for additional agar becomes more than what Japan can now produce.

With the price of Japan's Kobe No. 1 now established at $1.75 to $2.05, and in view of the world situation at the present time, the next few months will be important. Korea may prove to have been an important source of agar, in which event there will be a shortage in the product, and a higher price, until the producing nations step up their operations. The Japanese may have foreseen this development and may already be improving their agar production. Only time will tell.

Coloring of Pharmaceuticals

(Continued from page 323)

is often better engineering practice first to dissolve the dye in the water fraction then to add the alcohol.

4. Solutions of dyes in fats, greases, oils and waxes are also more easily prepared at 60° C.-80° C. than at room temperatures. With these media it is good practice to paste the dye with a small quantity of the liquid, stirring until smooth, then add all the remaining vehicle and heat to 60° C.-80° C. until solution is complete. If any waxes do not melt at 80° C., use a temperature only slightly above the melting point of the wax. With the waxes and fats the following steps are suggested:

(a) Stir the dye with an equal weight of melted wax, cooling slightly to get a stiffer paste (greater shear).

(b) Add an amount of melted wax equal to the weight of both the dye and wax in Step *a*. Stir well, cooling to a pasty condition.

(c) Usually the mass from Step *b* can then be added directly to the rest of the melted wax. However, if specks of undispersed dye are still obtained, repeat Step *b*.

(d) Most of the dyes that are soluble in oils and similar liquids tend to soften or melt between 100° C.-150° C. Some of them also sublime in these temperature ranges. Consequently they should not be "cooked" too long nor at too high temperatures.

5. When dissolving dyes in hydrocarbons, glycol ethers, ketones, ethers, chloroform or other organo-liquids, it is also good practice first to paste the dye with some of the solvent, then dilute with solvent as warm as practical. In some cases refluxing is advantageous.

6. There are a few general rule-of-thumb guides as to the probable solubility of dyes which may be of interest:

(a) Dyes soluble in water frequently are also soluble in polyhydroxy liquids, such as glycerine (see Table I for data), glycols, and ethanolamines and in mixtures of these products, alcohols and ketones with water. In solvent mixtures containing water, it is often more convenient first to dissolve the dye in the water fraction. The solubility of dyes in these solvents and mixtures is a feature that is useful when formulating liquid prescriptions designed to be resistant to freezing (as during transportation in high-altitude aircraft). When working with glycerine the data in Table I may be useful; note that with one exception the dye solubilities approach 8 per cent.

Table I
Approximate Solubility of Some F.D.&C. Dyes in Glycerine

Dye	*Solubility at 30° C.* Grams Per 100 Milliliters*
F.D.&C. Red No. 1	9.0
F.D.&C. Red No. 2	7.5
F.D.&C. Red No. 3	10.0
F.D.&C. Red No. 4	1.5
F.D.&C. Orange No. 1	6.75
F.D.&C. Yellow No. 5	8.0
F.D.&C. Yellow No. 6	7.5
F.D.&C. Green No. 1	7.5
F.D.&C. Green No. 2	8.5
F.D.&C. Green No. 3	8.0
F.D.&C. Blue No. 1	8.0
F.D.&C. Blue No. 2	8.0

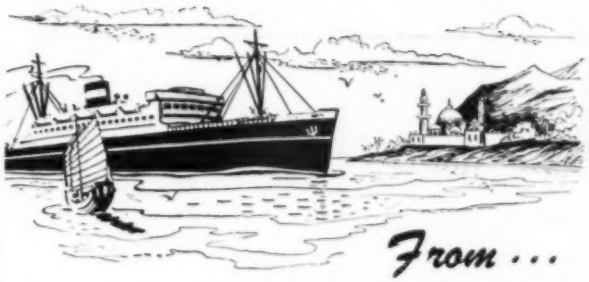
*Method: 10 grams of dye were heated with 100 milliliters of glycerine at 60° C. for four hours, the solution cooled to room temperature, filtered and the concentration of dye in solution was determined colorimetrically. With one exception, 60 per cent to 90 per cent of the dye present dissolved. It is probable that somewhat higher concentrations might have been obtained were more than 10 grams of dye added at the start of the process. Note that these dyes are all soluble in water also.

(b) Polyfunctional liquids, such as the glycol ethers, tend to dissolve all of the water-soluble and hydrocarbon-soluble dyes, although these latter to a lesser extent.

(c) Dyes soluble in water are usually insoluble in hydrocarbons.

(d) Dyes soluble in hydrocarbons are usually insoluble in water.

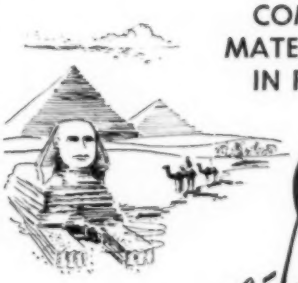
(e) Dyes soluble in toluene usually are also soluble in other hydrocarbons, halogenated hydrocarbons



From . . .

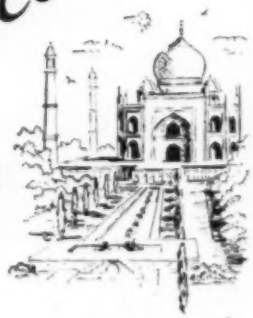
LANDS BEYOND THE SEAS

COME THE PRICELESS MATERIALS USED IN FORMULATING



Fragra-Scents*

* FINE PERFUME BASES



in

MODERNE
EXOTIC
BOUQUET
FLORAL
Types

Neumann,

MANUFACTURED BY:

Buslee & Wolfe, inc.

5800 Northwest Highway
Chicago 31, Illinois

Telephone ROdney 3-1130

Merchants • Importers • Manufacturers
ESSENTIAL OILS • AROMATIC SPECIALTIES
PERFUME CONCENTRATES • FLAVORS • WAXES

GUMS
ARABIC—TRAGACANTH—KARAYA
(Whole, granular or powdered)
HYDROSULFITE of SODA
(Pharmaceutical grade)
GELLOID
(Pure calcium Carragheen sulfate)
SULPHONATED OILS
(Vegetable and mineral bases)
VISCO GUM E
(Specially prepared for wave-set solutions)
Ask for "The Story of Water Soluble Gums"
WOLF BRAND PRODUCTS
JACQUES WOLF & CO.
Chemicals
PASSAIC, N.J.

PRIVATE FORMULA
Tablets and Capsules
BY THE THOUSANDS—
OR BY THE MILLIONS
your product accurately compounded
Over 39 years' experience enables us to render you prompt, accurate, and dependable service in the manufacture of your tablets and hard shell capsules. Our central location expedites delivery to any point in the country. Furnished bulk or packaged.
Vitamin Tablets and Capsules — Tablets — Ointments — Powders
We Invite Your Inquiries
Standard Pharmacal Co.
OF CHICAGO
PRIVATE FORMULA MANUFACTURERS
M. F. Charley, President
847-853 W. JACKSON BLVD. CHICAGO 7, ILL.

(chloroform), esters, balsams, resins, fatty acids; and in fats, oils and waxes of animal, vegetable or mineral origin; in many synthetic, substituted hydrocarbons, such as nitropropanes and halogenated naphthalenes and in phenol and cresylic acids. Toluene is, therefore, a good testing liquid.

(f) Dyes usually are more soluble in aromatic hydrocarbons (toluene) than in aliphatic hydrocarbons (petroleums).

7. All of the water-soluble, certified dyes are mutually compatible in water, except D.&C. Red No. 19, D.&C. Red No. 20, Ext. D.&C. Blue No. 1 and Ext. D.&C. Blue No. 2. These four latter dyes are "basic dyes", the chemical radicals carrying their chromophoric nucleii have positive charges, and they are salts of color bases. These four "basic" dyes are mutually compatible in water. However, they tend to form complexes with the other water-soluble "acid" dyes. These "basic dye"-"acid dye" complexes are insoluble or sparingly soluble in water, but often will be found to be soluble in alcohols, glycol ethers and other liquids. Advantage can be taken of this feature occasionally when a stain is wanted having a slightly greater than average resistance to water.

8. It is sometimes convenient to make up concentrated "stock" solutions of dyes and then use aliquot parts of these solutions in coloring prescriptions. However, stock solutions rarely should be kept for more than one day, inasmuch as the dye concentration may change, as by a partial evaporation of vehicle, or by some destruction of dye, as by hydrolysis, corrosion byproducts and enzymatic, bacterial or other action.

9. The stability of dye solutions is not only an important feature to determine for concentrated stock solutions, but also for the much more dilute solutions used in some products that may have to stand a long shelf-life during marketing or consumer use. All new products should be given "storage tests" of at least eight weeks duration and longer tests often are advis-

Table II
Effect of Temperature Changes on Solubility

	Grams of Dye Soluble in 100 Milliliters in Water*	
Dye	*At 30° C. (86°F.)*	*At 4° C. (39.2° F.)*
F.D.&C. Red No. 1	10.0	7.8
F.D.&C. Red No. 4	9.2	4.9
D.&C. Red No. 33	7.3	1.6
Ext. D.&C. Red No. 3	16.5	8.3
D.&C. Orange No. 3	14.7	4.5
D.&C. Orange No. 4**	18.3	4.6
F.D.&C. Yellow No. 1	18.4	4.4
F.D.&C. Yellow No. 5	21.7	5.1
F.D.&C. Yellow No. 6	23.8	10.0
D.&C. Yellow No. 10	10.8	6.6
Ext. D.&C. Yellow No. 1	7.3	0.4
Ext. D.&C. Green No. 1	31.2	8.3
F.D.&C. Blue No. 1	1.5	1.0
Ext. D.&C. Blue No. 1	9.7	1.1
F.D.&C. Violet No. 1	14.2	11.2
D.&C. Black No. 1	4.1	2.5

*These proportions may vary somewhat with different lots of dye.
**Some lots of D.&C. Orange No. 4 yield a 15 per cent solution in distilled water that is clear and mobile at 70° C., but which sets to a curdy paste at 50° C.-60° C. due to deposition of dye.

able. Solutions of dyes have been known to lose 10 per cent or more in tinctorial strength within twenty-four hours. Sometimes an initial induction period of little change is found, which may be as long as a week or several weeks in duration, after which a rapidly progressive (probably self-catalyzed) destruction of colorant may occur. These storage tests should be carried out with the dye in the complete product and in the same type of containers in which it is to be dispensed.

10. The solubility of dyes naturally varies with the temperature of the solvent. Even the relatively small change between room temperature and a refrigeration (39° F.) temperature is often critical. For example, the solubility in water of the dyes in Table II is greatly affected by temperature changes within this range.

11. The solubility of some dyes is markedly affected by the presence of soluble salts, "salting out" effects. D.&C. Orange No. 4 is an outstanding example of such a dye as the data in Table III illustrate.

Table III
Effect of pH of Small Additions of Sodium Chloride to 15% Solutions of D.&C. Orange No. 4

pH	*Water Only*	*0.15% Salt**	*0.375% Salt*	*0.75% Salt*
2	Clear	Cloudy	Soft Paste**	Stiff Paste***
7	Clear	Cloudy	Stiff Paste	Stiff Paste
10	Clear	Sl. Pasty	Soft Paste	Stiff Paste
12	Soft Paste	Soft Paste	Stiff Paste	Stiff Paste**

*Grams of sodium chloride in 100 milliliters of dye solution.
**Practically a slurry.
***Gel and crystals of deposited dye set up to a very stiff paste, (a pencil will stand up in it).
‡‡Solutions of this dye at lesser concentrations will tolerate larger salt additions, for example, isotonic salt solutions can be tinted with this dye.

12. The effects of changes in the hydrogen ion concentration of certified dye solutions are very great in the cases of seven dyes and twelve pigments, as listed in Table IV. All of these dyes have water-soluble sodium salts, but their corresponding colorant-acids are insoluble in water. Therefore, these water-insoluble pigments are soluble in alkaline solutions. Their water soluble derivatives are precipitated from solution on the addition of acids. In both cases distinct color changes occur. It should be noted also, that many of these colorants, both the colorant-acids and the sodium salts, are soluble in alcohols, glycol ethers and other liquids, although usually not to the same degree.

13. There are three certified colorants, normally insoluble in water and, therefore, sometimes classified as "pigments", which can be dissolved in alkaline, reducing solutions. When suspended in water containing small percentages of sodium hydroxide and sodium hydrosulfite, these colorants are converted to so-called "leuco" derivatives, soluble in water. These colorants are:

D.&C. Red No. 30—Helindone Pink
D.&C. Blue No. 6—Synthetic Indigo
D.&C. Blue No. 9—Indanthrene Blue GCD

On the addition of oxidizing agents to the "leuco" solutions, or on aerating, the original water-insoluble dye is re-formed. (See Table VII).

Incidentally, the changing of these dyes by the processes of chemical reduction, solution, re-oxidation or re-formation and reprecipitation of these dyes raises the fine, legal point as to whether the re-formed dyes

"HORSE HEAD" U.S.P. ZINC OXIDE
IMPROVES COSMETIC POWDERS
5 WAYS

1. BETTER APPEARANCE
High covering power
Warm whiteness
Fine texture

2. LONGER-LASTING
Superior adherence
High oil absorption
Perfume fixative

3. DEODORANT
Neutralizes perspiration acids
Bacteriostatic action

4. SKIN PROTECTION
Soothing
Mildly astringent

5. SUNBURN PROTECTION
Screens out sunburn rays

THE NEW JERSEY ZINC COMPANY
Founded 1848
Products distributed by
The New Jersey Zinc Sales Company
New York · Chicago · Boston
Cleveland · San Francisco · Los Angeles

are "from a certified batch".[4] Unofficially the opinion has been expressed that unless toxic contaminants, notably lead and arsenic, get into them during this application processing, the original certification status of the colorant holds.

Table IV

Effect of the Hydrogen Ion Concentration (pH)

*Water-Insoluble Pigment (Colorant-Acids)**	*Corresponding Water-Soluble Sodium Salts*
D.&C. Red No. 21 (FL)	D.&C. Red. No. 22
D.&C. Red No. 21 (XX)	D.&C. Red No. 22
D.&C. Red No. 24	D.&C. Red No. 25
D.&C. Red No. 27	D.&C. Red No. 28
D.&C. Red No. 29	——
Ext. D.&C. Red No. 4	Ext. D.&C. Red No. 5
D.&C. Orange No. 5	D.&C. Orange No. 6
D.&C. Orange No. 8	D.C. Orange No. 9
D.&C. Orange No. 10	D.&C. Orange No. 11
D.&C. Orange No. 14	——
D.&C. Orange No. 15	——
D.&C. Orange No. 16	——

It may be of interest to point out that these three dyes are not usually manufactured soft enough in texture to have good dispersion properties as pigments, and may vary widely from batch to batch. Probably their principal usefulness is for coloring certain sutures and in tinting powdered oxidizing products.

14. The solubility of dyes is usually adversely affected by the presence of heavy metal salts and hardness in water. Solutions of dyes prepared or stored in metal vessels may become hazy if the metal enters the product and precipitates the dye. Often too, the heavy metal salts of dyes may vary in color from the sodium salts. As a general rule, dye solutions are more stable in glass, or in surface-coated containers than when stored in direct contact with metals.

Bibliography will be included at end of article.

(*To be continued*)

Hair Conditioners

(*Continued from page 329*)

hair with them. In the final analysis this is the type of opinion which would be more likely duplicated by the ultimate consumer, since it is presupposed that the shampoo would, in addition to the conditioner, be possessed of the other desirable attributes, principally detergency and foaming.

The amidic types of preparations are weakly cationic and a theoretical case could be set up for them since they would have to be weak in their activity if they were to remain compatible with the anionic substances present. The polyethylene oxide esters do not seem to fit into any particular theoretical category, but they may do the job indicated. There are frequent instances where the fact had been found first and the theoretical explanation advanced afterwards.

In any case, careful testing programs would be indicated before any of these agencies are ready for adoption. Whether or not they will be introduced in large enough concentrations to effect the present buying habits is still questionable, but I believe that further work will produce a product more readily used.

Factors Governing Today's Life Span

(*Continued from page 319*)

control. Some of the rickettsial and viral infections are also vulnerable although much remains to be done in this direction. Other factors must also be credited for our modern extension of the life span. Two million diabetics can thank insulin for normal lives. New and daring surgical procedures, early diagnosis and new supportive measures have played an appreciable but minor role. Chemotherapy is overwhelmingly responsible for our augmented years.

Because large numbers of persons are now reaching 68 years—plus or minus—a new division of medicine automatically was born to cope with the problems more or less peculiar with age. This new branch of medicine has been termed Geriatrics, which deals with the treatment of disease more or less characteristic of old age; also pathologies which can occur at any time but pose special problems in advanced years. Psychogeriatrics is concerned with the psychological and psychiatric problems of age. Gerontology is the study of the aging process. Gerontotherapeutics is the science which attempts to slow down the changes of physiologic age.

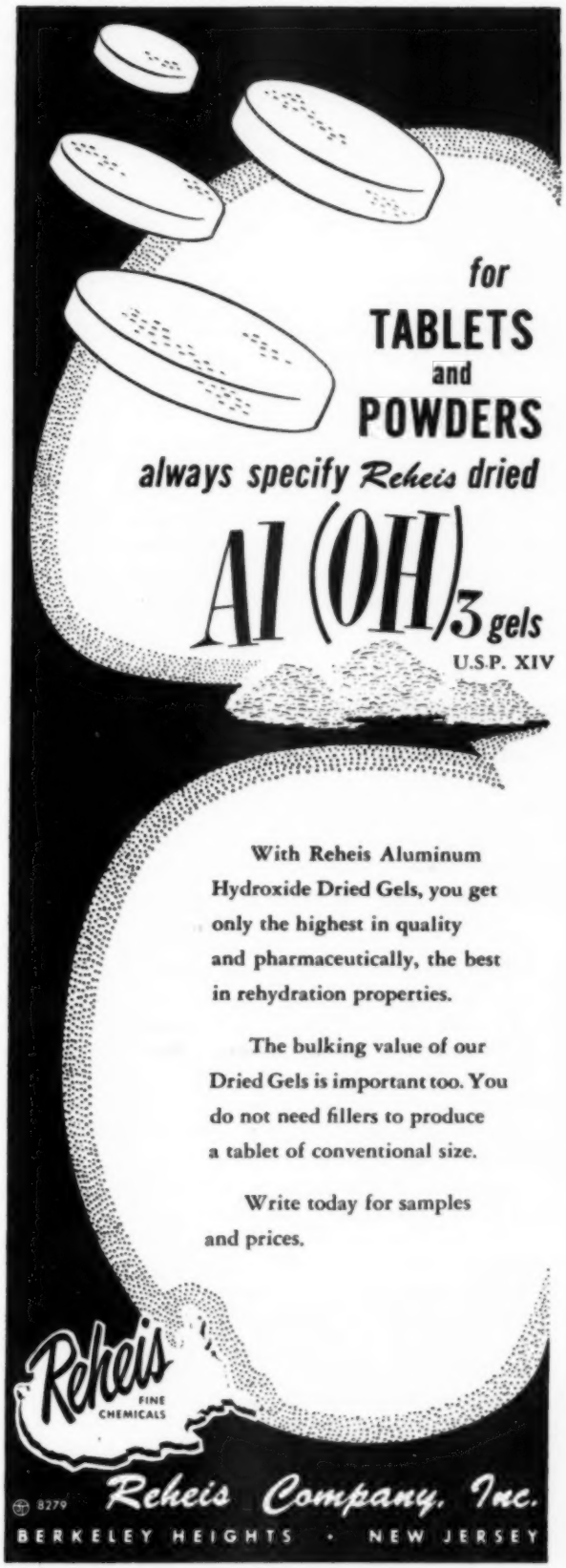
The lengthening of our lives is truly a gift of incalculable value; but it is not enough. Multiple and widespread evidence of gross physical and mental recession has not been prevented or even mitigated. Of what avail to live if the eyes do not see nor the ears hear—closing the doors to the infinite beauties of sight and sound and communication. Sans teeth, sans hair, tortured by rampant arthritic and rheumatoid afflictions plus degenerative impairment of the gastro-intestinal tract, the cardio-vascular system, the excretory system and the skeletal system—these and their sequelae add up to years without life. Mental decline usually means a cruel expulsion from social intercourse or the loss of opportunity to engage in productive or pleasurable activity. And even worse, is the consignment to those still infamous institutions known as mental hospitals. Not a pretty picture but well known to those fortunate or unfortunate enough to have evaded dissolution at three score and ten. There are exceptions; outstanding by their rarity are those cases where the century mark is approached with a normally functioning body and brain. Longevity when not accompanied by the above described degenerative syndrome, can be of inestimable value to the community, nation and the world. Such persons are rich in valuable experience gained through years of trial and error—success and failure. Frequently they have acquired special skills and ability that can be had only by a lifetime of persistent effort. Witness Edison whose fertile brain was active to the very end—well in the eighties. Gladstone was elected prime minister of England at sixty and held this position until eighty-two; Churchill is now 77 with a keenness of mind and activity of body which is the envy of many younger men; at 78 Walter Damrosch was embarking upon a career as a concert pianist.

Man has two ages—the physiologic which is real,

definite, concrete; the chronologic which is merely relative. Repeatedly we note mild or frank advanced evidence of decay at the early age of 25. Occasionally there will be seen persons of 50 devoid of any sign of senility, which introduces another interesting question, "why are some people old at 25 and others young at 50?" What are the factors and influences involved in this paradox and what are the causes for failure to live out the normal life span, or at least what is normal for today? Heredity cannot be denied some sort of role in longevity. Many studies have shown that long lived individuals are most often the children of long lived parents. We are not sure here whether long life was due to the sole fact that the parents were long lived, *or* because the parents consciously or subconsciously, conducted their mode of living in a manner conducive to longevity and imparted these habits to their children. Another factor of some importance seems to be the age of the mother at the time of the child's birth; the younger the mother, the greater the child's life expectancy. Excesses of any sort are physiologically destructive and therefore instrumental in shortening life. In this category would fall a classic example—alcoholism. There are also many others. Sexual excesses, especially for the male, are damaging and unquestionably are seriously implicated in prostate pathology which is so common in the middle ages. Lack of a reasonable amount of physical exercise throughout early and middle adulthood, is a slow but sure path to senescence. There is every reason to believe more bodies "rot" out than wear out. It seems that nature when not called upon for regular physical output, no longer feels it necessary to maintain the body in a state of normal tonicity.

Witness many top-flight athletes, who in their early twenties were outstanding physical specimens, who upon entering business or professional life, discontinued all physical activity. Upon reaching the fourth or fifth decade, these persons are in a state of advanced deterioration. Worry, high-pressure living, insufficient rest, over-work, industrial hazards—all these take their toll. The accumulation of many tiny daily traumata in the course of years total up to formidable injury. Smoking, or at least excessive smoking, merits serious suspicion as a first class villain. In 1900, lung cancer occupied 6th or 7th place in the scale of neoplastic disease. Today, 50 years later, it has advanced to first or second position. No other form of cancer has shown such an increase. Last year one billion cigarettes were manufactured daily in this country. This meant that every man, woman and child in America had to smoke 6 cigarettes daily to consume this production. The curve of increase of cigarette sales closely parallels the curve of increasing incidence of primary lung cancer.

Greater by far, than the combined effects of all these factors, is the role of nutrition as the prime-mover in the degenerative processes, of which is composed the engulfing tide of chronic disease. The concomitant disability is taxing our medical resources to the utmost; is creating complex and vast social problems; last but


for
TABLETS
and
POWDERS
always specify Reheis dried
Al (OH)3 gels
U.S.P. XIV
With Reheis Aluminum Hydroxide Dried Gels, you get only the highest in quality and pharmaceutically, the best in rehydration properties.
The bulking value of our Dried Gels is important too. You do not need fillers to produce a tablet of conventional size.
Write today for samples and prices.
Reheis
FINE CHEMICALS
8279
Reheis Company, Inc.
BERKELEY HEIGHTS · NEW JERSEY

not least, is the imposition upon society, a heavy economic burden. Degenerative pathology is responsible in the main for the end of life at 68.2 years.

Nutrition may be divided into three major divisions; hypo- or sub-nutrition, characterized primarily by deficiencies; normal nutrition which needs no definition; hyper-nutrition, generally distinguished by gross and manifold evidence of excess. With few exceptions, abnormal nutrition may be said to be sum total of nutritional deficiencies and errors—sins of omission and commission. Improper dentition, faulty absorption and poor utilization can also produce symptoms of subnutrition. Losses by diuresis and perspiration and increased requirements also predispose to deficiency.

We shall briefly discuss the mechanism whereby nutritional errors and deficiencies are etiologic in the huge tide of degenerative disease, particularly at the geriatric age. Gerontotherapeutics, or perhaps a better term would be chronotherapeutics, is that science or art embracing the mitigation or prevention of premature physiologic aging. When should its practice commence? As early as possible—at conception, for surely we cannot achieve a perfect casting if the quality of the metal is poor or if the mold is defective. The amazing results of pre-natal dietary fortification should make supplementation mandatory in all pregnancies. The literature is replete with reports of mass studies which offer dramatic evidence of its value by virtue of the superiority of the supplemented child over the unsupplemented cases. The mothers, too, benefit by easier deliveries with tremendously less post partum complications. Assuming that we now have a normal child entering life, an abundance of constructional and functional nutritional bio-chemicals are vital *now*, if we are to build for longevity. For instance, teeth at 50 are to a very great extent determined by diet at 5 and subsequently. It is or should be known that a sound dental complement can be obtained only by a sufficiency of vitamins A, D, B complex, C, plus calcium, phosphorous and other trace minerals—all this must be had from 5 years of age. Equally important during the period of growth and even adulthood, is the avoidance of sugar in any form and to a lesser degree, starch—if dental structure is to be saved from erosion. America consumed 1 and ¼ billions of dollars worth of candy last year which must be assigned the guilt for our rampant dental caries. Impaired dentition in adult life will impede the ingestion and digestion of normal food requirements; failure to ingest, absorb or utilize minimum dietary components will exact a heavy penalty in immediate and future physical disintegration. Probably no single body function exerts such a subtle influence on other physiologic processes as a long life cannot be over-emphasized.

A multitude of physical and mental disorders almost universally observed in the so-called "aged", were germinated during childhood and youth, and came into full bloom during adulthood. This sudden or not so sudden appearance of degenerative pathology in later life—is due to a number of long standing abuses.

One of the major factors involved in this phenomenon resides in the fact that it is a rare person who was fortunate enough to have had available a really adequate diet for the first 30 or 40 years. Mild chronic deficiencies and errors, unapparent at 30, suddenly and accumulatively assert themselves at 40 or 50 years of age. Age itself produces a cycle of nutritional failure; lessened activity and consequently reduced caloric requirements necessitate a reduction in total dietary intake. Demands for accessory, vital factors such as vitamins, minerals, proteins, water, remain more or less constant. Obviously, with a substantially decreased total consumption of food, this demand cannot be fulfilled. Food fancies and eccentricities further amplify this deficiency. Therapeutic diets prescribed for certain special purposes are often short cuts to sub-nutrition. Mackie,[1] states, "certain hospital dietaries are insufficient to maintain the admission blood levels of patients —true primary deficiency may actually be produced in the hospital". This is indeed a grievous situation especially at a time, when, because of illness or surgery, the body has extraordinary and urgent requirement for an optimum dietary. Still another factor predisposing towards malnutrition in the aged, is the dependence upon highly refined carbohydrates as the main staple of diet. Inasmuch as these types of food may be eaten with a minimum of mastication, their popularity among persons with impaired dentition is not without reason. However, little or no essential accessory factors will be derived from such a source—frequently not even enough to metabolize the food itself. This forces a call upon reserve metabolic factors, if any, further depleting an already depleted system.

Specific evidence indicting nutrition as the major force in the etiology of degenerative disease would be of interest, and this, as we have previously stated, governs our life span. One of the most destructive nutritional practices of the American public of all ages is over-eating. Obesity affects approximately from 25 to 30 per cent of the general population. This form of malnutrition is a paramount factor in the production and/or complication of practically all degenerative pathologies of middle and later life. There are two principal causes for over-eating—equally common and if unrestrained, equally deadly; first is psychogenic hunger or hunger of nerves and second is "instinct to gorge". The former, psychogenic hunger is used as an escape from boredom, tension, unhappiness and other psychic stress. Food stimulates the taste buds which constitutes a pleasurable indulgence, and after deposition in the stomach, produces a feeling of satisfaction and sedation. The act of dining in itself, is a time-filling activity of importance to those unfortunates whose hours are a vacuum. Another remarkable aspect of psychogenic hunger is that although persons so affected have no physiologic need for food and generally have but little *real* appetite at the commencement of the meal, sight, taste, smell and mastication actually produce a formidable interest in food. Thus a vicious cycle is created. The second cause of over-eating, "the instinct to gorge,"

exists in everyone. In the dim distant past, it served a vital purpose. In those prehistoric days, food was scarce and its procurement was a matter of daily chance. There might elapse many days without any nourishment. So nature endowed Man with an instinct, which expressed in words, said, "eat all you can when you can". Nature rewarded or lured Man into this reasoning by the pleasurable sensation known as taste and also by allaying distressing stomach contractions engendered by the void therein. The need for such foresight has long ages ago disappeared but the instinct remains. Unless control is enforced—obesity is the inevitable result.

Obesity or over-weight, in the past, has been regarded with mild askance or completely ignored as a health detriment, by both the medical profession and the laity. Table 1 taken from and with thanks to Bordens Review[3] of Nutrition Research[2], will dispell this indifference by dramatically exposing the capacity of obesity as a direct or indirect causative agent in long range, direct or remote, physiologic disaster.

TABLE 1

"STANDARD DEATH RATES per 100,000 for SPECIFIED CAUSES of DEATH, ALL AGES COMBINED, by WEIGHT CLASSES"

		"OVERWEIGHT"			
Cause of Death	*Normal Weight*	*5-14%*	*15-24%*	*25%*	*Total*
Organic Heart Disease	80	115	135	129	121
Angina Pectoris	16	32	39	37	35
Diseases of the Arteries	23	34	46	41	38
Acute and Chronic Nephritis	82	108	202	224	141
Cerebral Hemorrhage and Apoplexy	70	101	115	170	110
Cancer	61	64	73	86	68
Diabetes	14	22	45	117	36
Pulmonary tuberculosis	57	28	21	*	26
Pneumonia	63	56	64	72	59
Influenza	20	29	24	*	28
Accidents	60	65	65	87	67
Suicide	24	31	29	42	31

*Not Significant.

It is curious to note that pulmonary tuberculosis takes a substantial drop among those above normal weight. This might be explained by the thought that the TB bacillus thrive best under conditions of adversity. Over-fed persons generally do not fall into this classification. In surgery, obesity definitely multiplies operative risk and mortality. Gall bladder disease, varicosities, fractures and accidents have a higher incidence among the obese[3]. Master, Dublin & Marks[4] surveyed 74,000 industrial workers, the primary objective being blood pressure. Data obtained revealed a steady progression in average blood pressure directly with excess body weight. Armstrong[5] cites evidence to the effect that 15 per cent of those over-weight showed cardiogram deviations as compared with 8½ per cent among average weights. Autopsical studies by Wilens[6] considering only advanced atherosclerosis, yielded the information that between the ages of 45 to 54, 20 per cent of the obese were so afflicted. Those of poor nutritional status showed an incidence of 6.7 per cent. Diabetes takes a heavy toll among those burdened with adipose. Diabetic mortality or incidence in this group is 2½ times that found among average weights.

Over-weight apparently increases with advancing

HELENA RUBENSTEIN
COLGATE PALMOLIVE
ELIZABETH ARDEN
PERL MACHINES are known by the company they keep!
NOPCO CHEMICAL
NOVOCOL CHEMICAL
HOFFMAN-LaROCHE
MERCK &
ROGER &
JOHNSON
More and more of the nation's leading drug and cosmetic producers have turned to PERL bottle, tube and jar filling machines for the speed and accuracy their fine products demand. Whatever your filling requirements, PERL can make the machine that will do the job best.
A COMPLETE LINE OF MACHINES
• Bottle Filling • Can Filling
• For Gravity, Vacuum or Pressure
• Jar and Tube Filling and Closing
• Bottle Cleaning
• Ampoule Filling
Write Today for Catalog D-3
PERL
PERL MACHINE MFG. CO.
68 JAY STREET BROOKLYN 1, N. Y.

years but this too is abnormal. The passage of time in itself cannot produce or deposit adipose. Decreased physical activity, which does take place, should be compensated for by a reduced intake of high caloric foodstuffs. After 45, the influence of above average weights becomes even more profound. Table 2 leaves no doubt as to the seriousness of obesity in the middle years.

TABLE 2[7]

"INFLUENCE OF WEIGHT on MORTALITY as MODIFIED by AGE"
DEATHS per 100,000

	Age in Years	
Weight	*Under 45*	*Over 45*
Standard	463	1308
Underweight, total	498	1274
Overweight, total	527	1824

Table 3 is of interest inasmuch as it unveils mortality differentials in relation to variation in degree of obesity.

TABLE 3[8]

"INFLUENCE OF OVERWEIGHT on MORTALITY in PERSONS AGED 45 to 50 YEARS"

Pounds Overweight	*Increase in death rate over average, per cent*
10	8
20	18
30	28
40	45
50	56
60	67
70	81
90	116

We have thus far discussed in a limited form but one segment of nutrition—merely a birds-eye view of errors or excess. Without any mention of the deficiency diseases, of which there are many, it is readily apparent that this one phase, hyper-nutrition, as a single, individual culprit, is guilty of enormous damage to our general health level. Conceive then, the inconceivable amount of disease engendered concertedly by hyper and hypo nutrition or nutritional deficiencies and errors. At a later writing we shall bring into focus the role of these deficiencies. At this point it cannot be denied that the physician will be forced, and quickly, to recognize abnormal nutrition as the fountainhead of practically all disease. Victory in the bacterial wars make such recognition urgent—the alternative is a society ravaged by an ocean of chronic, degenerative, parasitic pathology.

REFERENCES

1. Mackie, T. T., A Nutritional Study of Hospital Diets, Hospitals 15:106, Feb. 1941.
2. Borden's Review of Nutrition Research. Oct. 1951.
3. Rynearson, E. H. and C. F. Gastineau, Obesity, Chas. C. Thomas, Springfield, Ill. (1949).
4. Armstrong, Dublin, Wheatley and Marks, Annual Session A.M.A., Atlantic City, 1951.
5. Ibid.
6. Wilens, S. L., Bearing of general nutritional status on atherosclerosis, Arch. Int. Med. 79, 129 (1947).
7. Borden's Review of Nutrition Research, October 1951.
8. Ibid.

Dandruff

(Continued from page 321)

They point out that, according to modern concepts, dandruff may result from abnormal secretions of the sweat and oil glands of the scalp, abnormal production of the horny layers of the skin, and perhaps from an accumulation of dust and dirt particles and an accompanying overgrowth of certain microorganisms.

The theory that germs might be responsible for the appearance of dandruff was suggested in the latter part of the nineteenth century. Dermatologists who studied the disease reported that three types of organisms were associated with dandruff. It is now believed that all three types are the same microorganism[16] which has been described variously as the bottle bacillus, the flask bacillus, the balloon bacillus, and also as *Pityrosporon orale*.[17] Today, however, there is considerably difference of opinion concerning the role played by this organism. While one group believes it is an important causal factor in dandruff, another contends the organism is a saprophyte and a secondary invader.

Those of the latter group feel that there is insufficient evidence to prove the germ theory of dandruff or to establish that the pityrosporon is of etiological importance. Challenging this view, Harry[4] notes that there are those who regard the organism as a harmless saprophyte because its culture has proved difficult and because it has been difficult to reproduce the disease with this organism in man or laboratory animals.

In explaining the mode of action, Savill[1] states that the invasion of the epidermis by the pityrosporon leads to a multiplication of the cells and consequent scaling of the horny layer. In the oily type of dandruff, the bottle bacillus multiplies and the skin of the scalp reacts by throwing out serum. Microscopic examination of the scales shows not only the presence of the bottle bacillus, but also staphylococci between the scales.

In her own studies, Savill examined several hundred scrapings obtained from oily, scaly and normal scalps, before and after treatment. From these observations she concluded that the bottle bacillus is not a normal inhabitant of the skin. It is rare on the scalp unless there is definite dandruff and then it is usually abundant. After the use of antiseptics, the organism was not found on the scalp of many patients, and the dandruff had also disappeared.

Somewhat different findings were reported by MacKee and Lewis.[18] They found *Pityrosporon ovale* on 70 per cent of normal scalps and on 66 per cent of the scalps on which there was concomitant skin disease. However, on the dry or oily scaly scalps, the incidence was almost uniformly 100 per cent. In reviewing these and other findings, Wright[19] calls attention to the fact that investigations of the pathogenicity of *Pityrosporum orale* have been hindered by the difficulty in obtaining a cultural growth. This, says he, immediately suggests that, in the human, certain factors may be necessary to provide the proper soil for the organism to grow and produce disease.

According to Kelly and Artook,[20] the fertile soil of seborrheic dermatitis enhances the growth of *Pityrosporum ovale*. They cite Dowling,[21] who stated that seborrheic dermatitis is due to a primary infection by yeast-like organisms, notably the bottle and flask-shape bacilli. These, he noted, usually are saprophytes, but are capable of becoming pathogenic. Similarly, in discussing the factors that predispose to seborrheic dermatitis, Mitchell-Heggs[22] points out that eventually there is a breakdown in the normal defenses against various microorganisms, including the pityrosporum and certain other infection-producing bacteria.

Seborrheic dermatitis, as such, is a more severe condition than either dry or oily dandruff. Fortunately, seborrheic dermatitis is much less common than the other types. Its incidence is estimated[2] at about 0.2 per cent or one case per 500 persons. Described as an acute or subacute inflammatory disease, the redness, itching and scaling of seborrheic dermatitis is not limited to the scalp. It may also involve the ears, eyebrows, eyelids, nasolabial folds, the middle of the chest (presternal area), the back (interscapular surfaces) and perhaps the genitocrural region.

Acne often accompanies this condition[22] and it is sometimes difficult to differentiate the disease from psoriasis.[17] Seborrheic dermatitis, says Goodman,[3] is the forerunner of baldness, but it cannot be stated with certainty that it is the cause of baldness.

Although there are different views as to the actual cause of the disease, it is well recognized that seborrheic dermatitis is associated with and aggravated by excessive ingestion of alcohol and carbohydrates, poor personal hygiene, chronic gastrointestinal disturbances and conditions of confining work, fatigue, excessive sweating, and nervous stress.[23] Wright[19] calls attention to the frequent flare-up of a quiescent dermatitis following nerve shock or exhaustion.

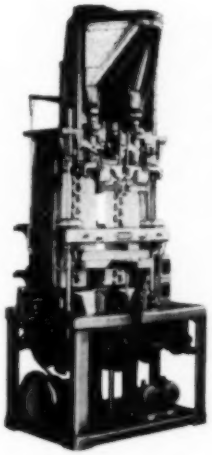
In discussing the prognosis of seborrhea, Sulzberger and Wolf[17] state that in the mild, scaly type the outlook is excellent. The condition responds readily to local treatment and suitable care will prevent recurrences. In the more severe cases, the prognosis is good with respect to individual attacks, but is poor with respect to permanent cure. These severe or generalized cases often present therapeutic difficulties because seborrheic dermatitis is based on unknown constitutional factors which are not affected by local treatment.

While proper living habits and elimination of infection are important,[16] Sulzberger and Wilten[11] point out that effective treatment of dandruff must include proper hygiene of the scalp and hair, together with regular applications of suitable local remedies. Proper management of the scalp disorder, say these dermatologists, can often stop or materially delay the hair loss associated with and sometimes following dandruff.

Proper hair and scalp care includes consistent attention to combing, brushing and shampooing. Experts[8] also stress the need for adequate and proper massage. Daily gentle message of the scalp will detach loose dandruff scales and subsequent brushing will, in

HYPODERMIC NEEDLE

Packaged for Sterility and Instant Use



Keeping pace with today's medical progress is the STOKESWRAP, the most versatile of all packaging machines. Automatically and safely, the STOKESWRAP fills, forms and heat-seals delicate hypodermic needles in protective aluminum foil. In this form they are always ready for instant use . . . and safely guarded against moisture, rust and contamination.

This is only one example of the extreme adaptability of the STOKESWRAP Packaging Machine. Perhaps your product—whether it's pharmaceutical, food, chemical, etc.—lends itself to a STOKESWRAP package. For advice and counsel, without obligation, write Stokes & Smith Co.

See us at the
National Packaging Exposition
Booth 524, April 1 - 4

Packaging Machinery
Paper Box Machinery

4912 Summerdale Ave., near Roosevelt Blvd.
Philadelphia 24, U.S.A.

STOKES & SMITH Co

Exclusive
West Coast Distributor
SIMPLEX PACKAGING
MACHINERY, INC.
(subsidiary of FMC)
534-23rd Avenue
Oakland 6, California

Subsidiary of Food Machinery and Chemical Corp.

addition, remove the flakes from the hair shaft.[15] As a matter of fact, some dermatologists[11,17] feel that brushing is perhaps the best form of massage.

Shampooing is an important part of hair care and dandruff prevention and treatment. Unfortunately, as pointed out by Levin and Behrman[6] millions of otherwise cleanly persons, especially women, go through life believing that their hair should be washed as little as possible. "The fact remains," say these authorities, "that, despite all time-honored notions to the contrary washing in most instances does not harm the hair. With the proper soap, thorough rinsing and drying, and the application of oil or salve to hair which has a tendency toward dryness, shampooing neither dries the scalp, destroys hair-growth, nor increases scaliness. Instead, the dirt, dust, scales, grease and infectious agents are removed, the liability of further infection decreased, and the general appearance of the scalp and hair improved." If this detail of personal hygiene is neglected, other local measures are of little value.

Frequency of shampooing is an individual problem, depending on the condition of the scalp and hair. Shampooing once a week is generally desirable. More frequent washing may be required if the scalp is oily or if the atmosphere is especially dusty.[11,24]

Many good soaps and shampoos are available for cleaning the hair and scalp. Products based upon synthetic detergents offer certain advantages in hard water areas, but preparations that dry and defat the skin should be avoided, especially by those with a tendency to the dry type of dandruff. Tincture of green soap is frequently recommended[10,19] as a shampoo. It is said to be particularly suitable if the hair is naturally oily. Tar preparations are also recommended[17] as shampoos when there is excessive oiliness of the hair. According to Mitchell-Heggs[22] a good tar shampoo is:

Soft soap	**50 parts**
Solution of coal tar	**10 "**
Alcohol, to make	**100 "**

In discussing the role of shampoos in the treatment of dandruff, Thomssen[25] points out that the Federal Trade Commission frowns upon the use of the term, "dandruff removing." This regulatory group takes the view that "dandruff is a physiologically normal condition . . . and cannot be removed permanently through the use of any cleansing agent."

Shampoos described as being particularly effective against dandruff often contain certain essential oils, such as oil of rosemary and oil of eucalyptus. The use of such oils is also specified in patents.[26,27] describing the formulation of shampoos suitable for treating dandruff and scaly conditions of the scalp.

Other bactericidal compounds are also being included in newer shampoos for reducing dandruff. Among them is hexachlorophene (G-11 of Givaudan-Delawanna, New York), which has already gained itself a reputation as an antibacterial agent and deodorizer.[28] Hexachlorophene is now serving similar functions in anti-dandruff preparations like Dial Deodorant Shampoo (Armour & Co., Chicago) and Rayette GDT Shampoo (Rayette Inc., St. Paul, Minn.) and perhaps others.[29]

The combination of antibacterial and detergent properties inherent in certain quaternary ammonium compounds is also being used in shampoos to combat dandruff.[30] A number of British dermatologists speak highly of shampoos based on cetrimide. B. P. Hodges[31] for example, reports that he had gotten "extremely gratifying results" with the following preparation in controlling seborrhea and seborrheic dermatitis:

Cetrimide	**150 gr.**
Ether	**2 oz.**
Alcohol	**2 oz.**
Water, to make	**6 oz.**

Diluted in a proportion of ½ ounce per pint of water, this is used as a shampoo on alternate nights for one week and once weekly thereafter.

Smith[32] uses a somewhat stronger cetrimide shampoos for seborrhea—5 per cent for adults and 2.5 per cent in young children. He warns, however, that the 5 per cent solution is very painful when it gets into the eyes, hence adequate care is necessary. Pertinent too is the suggestion by Mitchell-Heggs[22] that if soap irritates the skin, a 10 per cent solution of cetrimide in water can be used as a shampoo in cases of seborrheic dermatitis.

Various other quaternary ammonium compounds are being investigated for their possible value in shampoos against dandruff. One manufacturer states that, as the detergent in a clear liquid shampoo, his pyridinium chloride type of compound offers high lathering quality with excellent detergency plus bactericidal effectiveness against many scalp microorganisms.

The quaternaries are also of value in lotions designed to combat the organisms associated with dandruff.[33] For example, alkyl dimethyl benzyl ammonium chloride is the active ingredient of Rayette GDT Dandruff Lotion, effective for combatting the condition.*

Other agents have had longer, established use in the preparation of anti-dandruff lotions and ointments. Prominent among them are sulfur, the mercurials (mercury bichloride and ammoniated mercury), resorcinol and its monoacetate, certain tars, beta-naphthol, and chloral hydrate. They are used singly or in combination, with the obvious exception of sulfur and mercurial preparations.[17]

In preparing hair and scalp lotions, aqueous solutions containing alcohol in various proportions generally serve as the vehicles for the active agents. In discussing such products, Jannaway[34] notes that glycerine is a useful constituent of certain types of scalp lotion, in which its solvent, emollient and hygroscopic properties can exert unique effects. In some products, particularly those used in treating dry, scaly conditions, the glycerine is replaced by castor oil or by one of the more modern antidrying or conditioning agents.

Many formulas and prescriptions for anti-dandruff lotions are available in the technical[25,34,35] and derma-

*This quaternary (Benzalkonium Chloride) is also one of the active ingredients of Richard Hudnut's Formula A-10 lotion.

tological literature.[16,17] For example, in considering the treatment of simple dandruff, one authority[7] states that satisfactory results may usually be obtained by applying an alcoholic lotion once or twice daily. A little castor oil may be added to prevent drying. An active ingredient like salicylic acid has the property of reducing scaling and a mild stimulant, such as resorcinol or chloral hydrate is also of value. Thus a lotion made along these lines would be as follows:

Chloral hydrate	**2 parts**
Salicylic acid	**3 "**
Castor oil	**4 "**
Alcohol, to make	**100 "**

Resorcinol is a popular ingredient of hair and scalp lotions and many preparations containing this agent are available. Typical is a lotion[35] made from:

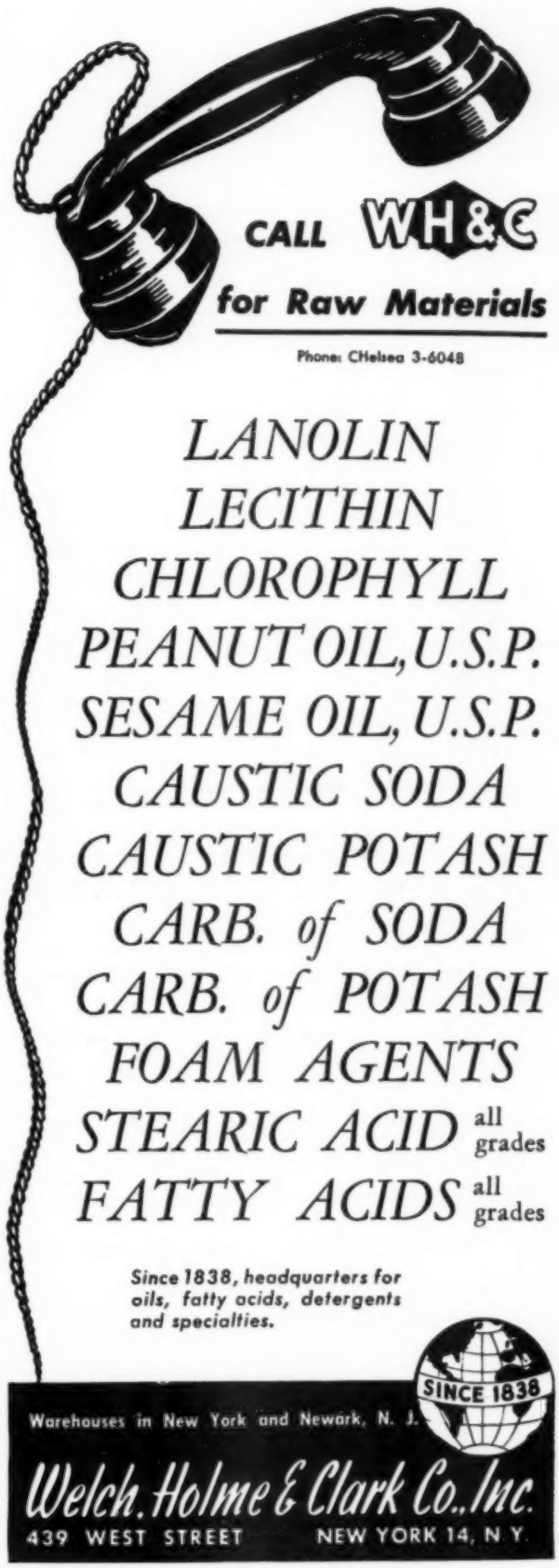
Resorcinol	**6.0 parts**
Glycerine	**10.0 "**
Alcohol	**9.6 "**
Water, to make	**100.00 "**

It should be noted that while resorcinol has no appreciable effect on dark hair, it is apt to discolor blond, grey or white hair. Resorcinol monoacetate, which is less likely to stain the hair, is often used in its place in equal amounts. Some authorities feel resorcinol and derivatives should not be used on light-colored hair; salicylic acid[36] or chloral hydrate[17] being substituted.

In addition to the quaternary ammonium compounds, various other agents, including patented products,[37] have been employed in lotion formulations. A few years ago, Rommel[38] introduced an anti-dandruff lotion containing sulfanilamide and reported good results from its use. However, the dangers inherent in the indiscriminate use of sulfa compounds has militated against the employment of such lotions.[15]

The latest development, and one that has attracted considerable interest, is the use of a selenium sulfide suspension for treating seborrheic dermatitis and related scalp conditions. In the original investigations, Slinger and Hubbard[39] used this agent in the form of a shampoo based on a synthetic detergent and containing 2.5 per cent of selenium disulfide. As a first step in their studies, they investigated the irritating and sensitizing properties of the preparation. It was found by 48-hour and repetitive patch tests for four weeks that the active constituent of the shampoo, selenium disulfide, produced neither primary irritation nor sensitization reactions in 100 normal subjects. The shampoo was employed therapeutically, over periods from one to seven months in 104 cases, 90 of which were cases of seborrheic dermatitis, without inducing signs of irritation, sensitization or toxicity. Eighty-one per cent of the cases of seborrheic dermatitis of all degrees of severity were controlled completely by the shampoo. Ninety-five per cent of the mild and 85 per cent of the moderate cases of this disorder were controlled completely during the period of use of this preparation.

The preparation is available on prescription as Selsun



How to produce more popular products

Always remember—
Never forget

NORDA MAKES GOOD SCENTS

Come to Norda if you want to make good scents pay off. Norda knows your needs. Norda scents make sales. Write today, right away, for free samples and catalogue.

Norda ESSENTIAL OIL AND CHEMICAL COMPANY, INC.
401 West 26th Street, New York 1, N. Y.
CHICAGO LOS ANGELES ST. PAUL MONTREAL
TORONTO HAVANA MEXICO CITY
LONDON PARIS

QUALITY RAW MATERIALS

Our complete stocks guarantee that you can obtain the exact grade and quality for your requirements without delay.

BEESWAX, sunbleached and yellow
Refined U.S.P.

TRAGACANTH GUM, all grades

KARAYA GUM, all grades

STEARIC ACID, fancy triple pressed

QUINCE SEED, Persian, recleaned

also

SPERMACETI WAX CERESIN WAX
MENTHOL

and all other cosmetic raw materials. Samples on request

Write for latest stock list

WALTER H. JELLY & CO.
INCORPORATED
412 N. Western Avenue Chicago, Illinois

Suspension (Abbott Laboratories, North Chicago, Ill.). The product has been studied by other investigators and publication of their findings is awaited with interest.

Ointments also have an important place in the treatment of conditions associated with dandruff, especially the more severe conditions. Sulfur, alone or in combination with other agents, is considered[10,13,24,36] particularly effective. Woolfat, petrolatum and cold cream have long been used as bases for making such ointments and they still find frequent use. The modern trend in preparing ointments for use on hairy areas is toward the use of less messy materials that can be washed away more easily than older fatty bases.[12,40] Cole,[41] for example, advises that any preparation for the scalp should, if possible, be made with one of the so-called water-soluble or vanishing type bases that do not render the hair so sticky.

This may account for the popularity of a frequently-recommended preparation[42] like Pragmatar (Smith, Kline & French Laboratories, Philadelphia) which, according to the "Manual of Dermatology"[23] consists of:

Sulfur	**3.0 parts**
Salicylic Acid	**3.0 "**
Cetyl Tar distillate	**4.0 "**
Sodium lauryl sulfate	**1.0 part**
Petrolatum	**30.0 parts**
Stearyl alcohol	**18.0 "**
Cetyl alcohol	**7.0 "**
Mineral oil	**25.0 "**

It is noted in this standard text that application of this ointment to the scalp once or twice weekly, with shampooing the following day, may be sufficient to control dandruff.

A somewhat similar ointment, described by Downing[36] is valuable in the treatment of seborrhea, may be made from:

Salicylic acid	**1 part**
Precipitated sulfur	**2 parts**
Hydrophylic ointment base U. S. P., to make	**30 "**

In considering the routine care of the hair and scalp as means of preventing or treating dandruff, Sulzberger and Witten[11] suggest that if a hair dressing is needed one should be chosen that is not too drying nor too oily or greasy. The formulation of such dressings is beyond the scope of this discussion, but data on their production are available from several sources.[4,25,43]

As already indicated, physiologic factors also loom large in the etiology of dandruff. Nutrition is an important element in this part of the picture and authorities stress the importance of an adequate diet and the avoidance of certain types of food.[12,20,41] Among the latter are concentrated carbohydrates, alcohol and highly seasoned products.

Many workers, in commenting on the importance of proper vitamin intake, put particular emphasis on the role played by components of the vitamin B complex. A high intake of vitamin B complex, especially pyri-

doxine and riboflavin is considered by some to be beneficial in seborrheic dermatitis.[20] Wright,[13] for example, calls attention to work which indicates that the development of seborrhea is favored by a deficiency of B vitamins and possibly narrows down to a deficiency of pyridoxine (vitamin B_6).

Of interest in this connection are more recent studies[44] which suggest that seborrheic dermatitis may be due to a local insufficiency of pyridoxine. Patients treated with desoxypyridoxine, a pyridoxine antagonist, were found to develop a dermatitis clinically indistinguishable from seborrheic dermatitis. After patients with this condition failed to respond satisfactorily to orally or intramuscularly administered pyridoxine, an ointment containing 10 mg. of the vitamin per gram of base caused clearing of the lesions. These findings suggest that one type of seborrhea is due to a metabolic defect on the skin which increases the local requirement for pyridoxine.

Also noteworthy are the beneficial results obtained by Andrews and his associates[45] from the use of vitamin B_{12} in cases of seborrheic dermatitis. The vitamin was administered by intramuscular injection. Local treatment was also given. Improvement was usually seen after two or three injections. Comparing their findings with other procedures, the investigators concluded that their results are superior to those that can be obtained by local treatment alone. In addition, they feel that the dermatitis is essentially a nutritional disease.

BIBLIOGRAPHY

1. Savill, A.: "The Hair and Scalp," Ed. 3, Baltimore, Williams & Wilkins, 1944, pp. 153-168, 75.
2. Miller, L. M.: Hygeia 20:100, 1942.
3. Goodman, H.: "Your Hair, Its Health, Beauty and Growth," New York, Emerson Books, Inc., 1950, pp. 31-41.
4. Harry, R. S.: "Modern Cosmeticology," Ed. 3, New York, Chemical Publ. Co., 1947, pp. 261-4, 274-294.
5. Editorial: J. A. M. A. 133:734, 1947.
6. Levin, O. L. & Behrman, H. T.: Merck Report 55:20, Jan. 1946; 55:20, Feb. 1946.
7. Mitchell-Heggs, G. B.: "Modern Practice in Dermatology," New York, Paul B. Hoeber, 1950, pp. 634, 784, 223-234.
8. Simon, F. A.: J. A. M. A. 125:350, 1944.
9. Hickey, C. S.: J. Maine Med. Assoc., May, 1950.
10. Edwards, J. F.: Your Health 9:33, Fall 1947.
11. Sulzberger, M. B. & Witten, V. H.: Today's Health 29:41, Sept. 1951.
12. Senear, F. E.: Postgrad. Med. 10:49, July, 1951.
13. Wright, C. S.: J. Michigan State Med. Soc. 42:105, 1943.
14. Anon.: North West. Drug. 57:34, Feb. 1949.
15. Committee on Cosmetics: J. A. M. A. 139:840, 1949.
16. Goodman, H.: "Cosmetic Dermatology", New York, McGraw-Hill Book Co., 1936, pp. 312-322.
17. Sulzberger, M. B. & Wolf, J.: "Dermatologic Therapy in General Practice", Ed. 3, Chicago, Year Book Publishers, 1948, pp. 341-353, 524, 535-7.
18. MacKee, G. M. & Lewis, G. M.: J. Investig. Dermat. 1:131, 1938.
19. Wright, C. S.: Med. World 59:431, 1941.
20. Kelly, D. E. & Arlook, T. D.: J. Indiana State Med. Soc. 43:1088, 1950.
21. Dowling, G. B.: Brit. J. Derm. 51:1, 1939.
22. Mitchell-Heggs, G. B.: Brit. Med. J. 2:1070, 1951.
23. Pillsbury, D. M., Sulzberger, M. B. & Livingood, C. S.: "Manual of Dermatology", Philadelphia, W. B. Saunders Co., 1943, pp. 264-6.
24. Anon.: "Selected Questions and Answers", Chicago, American Medical Assoc, 1939, pp. 124-6.
25. Thomssen, E. G.: "Modern Cosmetics," Ed. 3, New York, Drug & Cosmetic Industry, 1947, pp. 333-4, 349-362.
26. Larocque, A.: Canadian Pat. 423,730, 1944.
27. Elliott, P. A. D.: Canadian Pat. 452,764, 1948.
28. Anon.: Drug & Cosmetic Ind. 67:470, 1950.
29. Anon.: Chem. Week 69:33, Sept. 22, 1951.
30. Lesser, M. A.: Drug & Cosmetic Ind. 64;434, & 558, 1949.
31. Hodges, J. P. S.: Brit. Med. J. 2:225, 1951.
32. Smith, C. H. N.: Brit. Med. J. 2:314, 1951.
33. Hilfer, H.: Drug & Cosmetic Ind. 65:394, 1949.
34. Jannaway, S. P.: Perf. & Essent. Oil Rec. 36:149, 1945.
35. Richardson, K. N.: Soap, Perf. & Cosmetics 18:964, 1945.
36. Downing, J. G.: Amer. Pract. 2:357, 1948.
37. Donnelly, F. J.: U. S. Pat. 2,523,867, 1950.
38. Rommel, J. C.: Med. Rec. 158:478, 1946; Clin. Med. 53:12, Nov. 1946.
39. Slinger, W. H. & Hubbard, D. M.: Arch. Dermat. & Syph. 64:41, 1951.
40. Downing, J. G., Ohmart, L. M. & Stoklosa, M. J.: Arch. Dermat. & Syph. 50:8, 1944.
41. Cole, H. N.: Ohio State Med. J. 39:135, 1943.
42. Anon.: "Merck Manual of Diagnosis and Therapy," Ed. 8, Rahway, Merck & Co., 1950, pp. 1305-7.
43. Helfer, H.: Drug & Cosmetic Ind. 65:649, 1949.
44. Schreiner, A. W., Vilter, R. W. & Slinger, W.: Paper presented at a meeting of the Central Society for Clinical Research, Chicago, Nov. 3, 1951.
45. Andrews, G. C., Post, C. F. & Domonkos, A. N.: New York State J. Med. 50:1921, 1950.

World's Largest Source for Transparent Plastic BOXES!

No. 30
2½" x 1¾" x ¾"
Slide cover

No. 314
5½" x 3" x ¼"
6 compartments-hinged

No. 32
2¾" dia. x ⅝" deep

Here is the ideal type container for packaging your pharmaceuticals, medicinal products, cosmetics, etc.

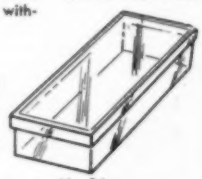
Over fifty molders supply us with 1001 different rigid Polystyrene boxes . . . variety of sizes, shapes, styles . . . hinged, plain, with and without compartments . . . in stock.

(No Mold Cost)

OR . . . if you have a special need, we will design a box to meet your requirements.

Our illustrated catalog is available upon request.

WRITE TODAY:



No. 34
4¾" x 1⅜" x 1" deep

BRADLEY INDUSTRIES

1652 N. Damen Ave., Chicago, 47, Tel: ARmitage 6-8198

Manufacturing Problems?

CONCENTRATE ON SELLING.

Let us take care of your production.
We can also handle your daily drop-shipments.

BULK AND COMPLETE PACKAGING SERVICE

Cosmetries Inc.

21 Irving Place ***New York 3, N. Y.***

REPUTATION BASED UPON PAST PERFORMANCE

***ARLINCO RESEARCH LABORATORY, INC.**

Research, Formulation and Application to the Industry. Ethical Pharmaceuticals, Drugs, Cosmetics and Perfumery.

333 W. 52nd St., New York 19, N. Y.
PLaza 7-3861

*A-R-L-inco means: Applied Research Laboratory, Incorp.

BJORKSTEN RESEARCH LABORATORIES

Research on contract basis
Arrangements for dermatological testing

CHICAGO, ILL. - 13791 S. Ave. O
MADISON, WIS. - 323 W. Gorham St.
NEW YORK, N. Y. - 50 E. 41st St.

EVANS RESEARCH & DEVELOPMENT CORP.

Chemical research—processes—products
Special facilities for cosmetics

SEND FOR BOOKLET "D"
250 E. 43rd St., N. Y. 17, N. Y. MU. 3-0871

RONALD CLARKSON
Tablet Consultant

A complete Advisory Service on New Tablet Products–New Tablet Applications–Special Coating Problems–Formula Developing–Production Methods–Plant Layout. Pharmaceutical–Chemical–Industrial–Food–Confections–Cosmetics–Toiletries.
1905 GRANT AVE., PHILADELPHIA 15, PA.
ORchard 3-4105

LEBERCO LABORATORIES

Hormone Assays • Drug Assays
Pharmaceutical and Cosmetic Research
Sterility Tests • Toxicity Studies
Send for information concerning our services
125 HAWTHORNE ST., ROSELLE PARK, N. J.

RESEARCH LABORATORIES
Frank D. Gull INC.
CHEMISTS · ENGINEERS
29 WEST 15TH ST. NEW YORK 11, N.Y. WA. 4-8800

SEIL, PUTT & RUSBY, Inc.

Analytical, Consulting, Research Chemists
Est. 1921. Specialists in Drugs, Cosmetics, Foods

Earl B. Putt, President and Director
Alfred S. Moses, Vice President
Stephen S. Voris, Ph.D., Chief Chemist

Formerly Experts for U. S. Dept of Agriculture
QUALIFIED COURT EXPERTS

Analyses Made — Formulas Developed
Research Investigations Conducted
Spectrophotometer Assays of Organic Products

CHEMICAL AUDIT CHECK ANALYSIS
CONTROL TESTING

Ask for Estimates, Quotations—No Obligation
Lab's: 16 East 34th St. New York 16, N. Y.
Telephone: MUrray Hill 3-6368

Business Opportunities

FOR SALE: Modern plant suitable mfg. cosmetics, pharmaceuticals, and chemical specialties, in new industrial section Suburban Chicago. 100,000 ft. ground floor, 2,500 ft. office and lab above. Vacant property. Sprinklered, adequate utilities. Available immediately, with or without equipment. Write Box M-1, DRUG & COSMETIC INDUSTRY.

CONSULTING SERVICE for the manufacture of Cosmetics, Pharmaceuticals, Flavors, etc. Dr. H. Salfield, 120 Prospect Avenue, Valhalla, New York.

Machinery and Equipment For Sale

UNION
Rebuilt Machinery
Established 1912

LIQUIDATING
At Terrific Price Reductions

The Ultra Modern Hard Candy and Mint Roll Manufacturing & Packaging Equipment formerly used to produce "Trolls" and "Hollywood Stars" Pressed Mints and Hard Candy Discs.
This equipment is excellent for use in the production of medicated candy, cough drops and candy containing antibiotics.

R. A. Jones Constant Motion Cartoners with counter and assembler for tablets or discs. Can handle oblong single pieces 120 to 140 cartons per min. cap.
Package machy. CA-2 Box Wrapper with electric eye, wax application unit, tear tape attachment continuous chain feed and heat-sealing units. Adjustable to size.
Townsend Roll Wrappers with Auto. Feeders. Can be used on any hydroscopic or dry material. With auto. hoppers that assemble individual pieces
Mint Roll Wrapping Machines, complete with motors and hoppers.
Package Machinery Co. FA2Q Cellophane and Wax Wrapper.
National Equipment Continous Vacuum Cooker.
Baker Perkins Plastic Tablet Forming Machines with 3-Way Cooling Conveyor and Sorter. Up to 2,000 pieces per min.
Mikro 4TH, 2TH, 1SH Pulverizers.
Colton Rotary Tablet Presses.
Colton Wet Granulator.
Stokes Drug Mills.
Dry Powder Mixers.

Samples of Packages Available Upon Request
Inspection at our New York showrooms and at our Chicago showrooms at 167 N. May St.
IMMEDIATE DELIVERIES
Write—Wire—Phone Collect for Complete Details and Prices of this Equipment

UNION STANDARD EQUIPMENT CO.
318-322 Lafayette St., New York 12, N. Y.

FOR SALE: Day 40 gal. Pony Mixer. Patterson 3½' dia. Stainless Conical Blender. New Stainless Steel Tanks, 50 to 500 gals. Stokes High Vac. pumps. Dryers Atmos. & Vacuum. Tablet machines 1" to 3". Powder, Paste & Liquid Mixers. Labeling Machines. Powder & Paste Fillers. Rotex Sifters. Mikro Pulverizer 2DH, 10 HP. Grinders, Hammer Mills, Roller Mills, Pebble Ball & Jar Mills. Portable electric agitators, Filter presses. Centrifuges. Kettles & Tanks, Stainless, Glass Lined, Copper, Alum., & Steel. Colloid Mills. Conveyors and Elevators. Soap Machinery. Send for Bulletin. We buy your surplus machinery. Stein Equipment Co., 90 West Street, New York 6, New York.

FOR SALE: F. J. Stokes DD2 Tablet Machine, rated 500-700 tablets per min.; Colton No. 4 Automatic Tube Closer & Clip Fastener; Stokes 79-80 Semi-auto. Tube Filler & Closer; Patterson S/S Kneadmaster, 110 gal. capacity, double arm, jktd., with 75 HP motor; Munson 2000 lb. Rotary Batch Mixer; Gedge Gray 7000 lb. jktd. Ribbon Blender; 2—Wolf 1800 lb. Ribbon Blenders; Capem S1F Capper; 3—Shriver Plate & Frame, Closed Delivery Filter Presses, 24", 12" & 7" sizes; Sperry 30" Open delivery and Shriver 24" Closed Delivery Aluminum Filter Presses; 1—Dopp 150 & 2—100 gal. Cast Iron, jktd., agit., Kettles; Fitzpatrick "D" S/S Comminutor; 29—S/S clad, open top Kettles, 30, 40, 60, 75, & 100 gal., 40 lb. jkt. pres.: Std. Knapp Self-adjusting Carton Gluer-Sealer, Comp. unit; 57—Aluminum Rectangular Closed Storage Tanks, including 800, 600 & 200 gal. capacities. ONLY A PARTIAL LISTING. Save time and money by sending your inquiries to CONSOLIDATED PRODUCTS CO., INC., 20-21 Park Row, New York 38, N. Y. Phone: BArclay 7-0600.

Machinery and Equipment For Sale

FOR SALE: Stokes Rotary Table Presses B-2, D-3, D-4; Kux Model 25 Rotary Tablet Presses; Mikro Pulverizer No. 2-SI. Stainless steel tanks from 15 gal. to 5700 gal. Stainless Clad & Stainless Steel Steam Jacketed Kettles, 10, 40, 60, 80, 100, 150, 500 gal. PERRY EQUIPMENT CORP., 1423 N. 6th St., Phila. 22, Penna.

Machinery Wanted

WANTED: To round our production; Automatic Filler & Closer for collapsible tubes, Fitzpatrick S/S Comminutor, Tablet Counter, and high speed Packaging Line. Give full details and price. Box N-5, DRUG AND COSMETIC INDUSTRY.

Help Wanted

PHARMACIST

B. S. in pharmacy.
No experience necessary.
Duties involve pharmaceutical compounding.

Ortho Pharmaceutical Corporation
Route 29
Raritan, New Jersey

ORGANIC CHEMIST for new product development (pharmaceutical) with well known company in Connecticut. B. S. or equivalent degree as well as some previous experience required. Submit detailed resume of education, experience, age, present salary, etc. Box M-4, DRUG & COSMETIC INDUSTRY.

HELP WANTED–Experienced Cosmetic Chemist. Send full details and history. Miriam Collins Cosmetic Company, 2508 Nicollet Avenue, Minneapolis, Minnesota.

SALESMAN who calls on Drug and Department Stores. Quality line of Dandruff Remover Shampoo, hair cosmetic as a sideline. State territory covered. Replies confidential. F. W. Lorick, La Marick Beauty Products, Inc., Office: 122½ East Fifth Street, Charlotte, North Carolina.

Situations Wanted

HIGHLY EXPERIENCED PERFUMER—First class reputation—important following—would consider first class opening with Essential Oil house or large Perfume manufacturing company—all inquiries kept in strict confidence. Write to Box M-5, DRUG & COSMETIC INDUSTRY.

COSMETIC CHEMIST: College degrees. A true artist in the production and duplication of best creams face-powders, lipsticks, etc. Experience in buying. Box M-6, DRUG AND COSMETIC INDUSTRY.

PROFESSIONAL RELATIONS: Highest type, mature, full time representative available to ethical pharmaceutical firm for special assignments. Lifetime in various pharmaceutical activities. Box M-3, DRUG & COSMETIC INDUSTRY.

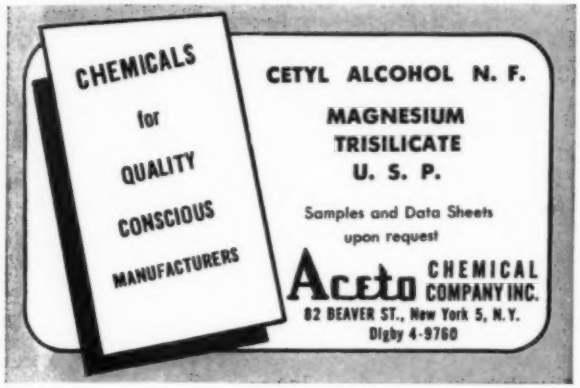
ADMINISTRATIVE — EXECUTIVE ASSISTANT: 33, Law, Chemical Degrees—6 years Legal, Administrative experience with Nationally-known Pharmaceutical and Chemical Corporations. Six additional years Technical experience. Proven ability in Negotiations, Contracts, Liaison, Legislation Analysis, etc. Box M-2, DRUG & COSMETIC INDUSTRY.

Business Opportunities

CONSULTING PERFUMER: extensive experience with aromatic raw materials; original formulations and fragrance duplication. Accepting long-range or short-term projects. Own well-equipped laboratory. All arrangements absolutely confidential. Box M-7, DRUG AND COSMETIC INDUSTRY.

— WILL BUY —
Cancelled—Unshipped—Rejected or Overstocked
Chemicals — Drugs — Solvents —Pharmaceuticals—Oils—Pigments, Etc.

CHEMICAL SERVICE CORPORATION
90-02 Beaver St. New York 3, N. Y.
HAnover 2-6970



Lower Your Packaging Costs
via Modern Packaging Machinery

WRAPPING MACHINES
BANDING MACHINES
BUNDLING MACHINES

We Will Gladly Send Data and Prices

Scandia MANUFACTURING COMPANY
NORTH ARLINGTON NEW JERSEY

Aromatic Chemicals
FOR PERFUMERY AND FLAVORS

Isopropyl Quinoline • Isobutyl Quinoline
Ethyl Anthranilate • Isobutyl Anthranilate
Diacetyl • Acetyl Propionyl • Acetoin

FAIRMOUNT
CHEMICAL CO., INC.
600 FERRY STREET • NEWARK 5, N. J.

The C. E. Ising Corporation
Manufacturing Chemists

AROMATIC PRODUCTS
"I.G." ("ISING" GERMICIDE)
SOAPS FOR KENNELS
AND INDUSTRIES
MASKING ODORS FOR INDUSTRIES
FOUNDED 1908
FLUSHING NEW YORK

falba
Reg. U. S. and Foreign Countries
"THE HEART OF LANOLINE"
THE OXYCHOLESTERIN
ABSORPTION BASE
Suggested Formulae on Request
Pfaltz & Bauer, Inc.
EMPIRE STATE BUILDING, NEW YORK

High Grade COSMETIC Powders
Tamms
● Powdered Talc ● Infusorial Earth
● English Kaolin ● Clay and Silica
● Precipitated Chalk
Send today for prices and samples.
Write us about your special needs.
Dept. RM-11
TAMMS INDUSTRIES, Inc., 228 N. LaSalle St., Chicago 1

Use **LABELS** AND **SEALS..**
by
JOHN HORN
835 - 839 TENTH AVENUE
NEW YORK 19, N. Y.
FOR OVER FIFTY YEARS
for greater sales appeal
METAL • EMBOSSED • ENGRAVED
DIE STAMPING FOR BOXMAKERS

MOULDS
for
LIPSTICKS
MASCARA
SUPPOSITORIES
STYPTIC PENCILS
and **DIES**
for ROUGE
COMPACT POWDER
Write for Catalog
A. CAVALLA, INC. 163 WEST 18TH STREET, NEW YORK, 11, N.Y.

CAMILLI, ALBERT & LALOUE S.A.

Grasse, France — Established 1830

Natural Perfumer's Materials Stocked
by Our American Affiliate

Mimosa

Jasmin

Tuberose

Rose

ABSOLUTES

BROOM (Genet)
CARNATION
CASSIE ANCIENNE
CLARY SAGE
EVERLASTING (Immortelle)
JASMIN Maximarome
JASMIN Pommades
JASMIN Chassis
JASMIN Benzol
LAVENDER Maximarome
MIGNONETTE
MIMOSA Maximarome
MOUSSE D'ARBRE Maximarome
MOUSSE D'ARBRE Colorless
NARCISSUS of the Plains
NARCISSUS of the Mountains
OAKMOSS YOUGOSLAVIAN
ORANGE Maximarome
ORRIS
ROSE DE MAI Maximarome
TUBEROSE Maximarome
TUBEROSE Pommades
VIOLET LEAVES Maximarome
YLANG YLANG A

CAMILLI, ALBERT & LALOUE, INC.

14 East 48th Street — New York 17, N. Y.
Phone PLaza 3-6070

ADVERTISING INDEX

Aceto Chemical Co., Inc 427
Advertising Plastics Company 408
American Cholesterol Products, Inc 360
American Chlorophyll, Inc 408
American Cyanamid Company ... Insert facing 293
Anderson Bros. Mfg. Co 384
Aromatic Products, Inc 299

Baker & Adamson Products, General Chemical Div., Allied Chemical & Dye Corp 298
Baker Chemical Co., J. T 354
Baker & Bro., H. J 382
Beauty Fashion Magazine 304
Bertrand Freres, Inc 312
Bowman & Company, Charles 306
Bradley Industries 425
Bush & Co., W. J 392

Calco Chemical Division 309
Calif. Fruit Growers Ex 350
Calumet Manufacturing Co., Inc 338
Camilli, Albert & Laloue, Inc 428
Carbide & Carbon Chemicals Co., A Division of Union Carbide & Carbon Corp 374
Carr-Lowrey Glass Co 336
Cavalla, Inc., A 427
Chiris Co., Inc., Antoine 292
Chrystal Co., Inc., Charles B 392
Colton Company, Arthur 396
Cosmetries, Inc 425
Crown Can Company 344
Crown Cork Specialty Corp 314

Devold Oil Company, Peder 409
Distillation Products, Inc 289
Dodge & Olcott, Inc 291
Dreyer, Inc., P. R 302
Dunkel & Co., Inc., Paul A 387
Durlin Co ..... Insert bet. 300-301

Ertel Engineering 402
Economic Machinery Company 405
Exact Weight Scale Co 407

Fairmount Chemical Co 427
Felton Chemical Co., Inc 294
Firmenich & Co., Inc ..... Insert facing 357
Florasynth Labs., Inc 293
Foster-Forbes Glass Co 348
Fritzsche Brothers, Inc ..... Insert bet. 388-389

Givaudan-Delawanna, Inc ..... Insert bet. 312-313
Glass Products Co 392
Greeff & Co., R. W 396

Hazel-Atlas Glass Company ..... Insert facing 341
Heyden Chemical Corp 311, 358
Hinde & Dauch Paper Co ..... Insert facing 292
Hoffmann-La Roche, Inc 285, 394
Horix Manufacturing Co 401
Hormann & Co., F. R 386
Horn, John 427
Huisking & Co., Inc., Chas. L 409

Industrial Chemical Sales ..... Cover 2
Inland Alkaloid Co 386
Innis-Speiden Company ..... Insert bet. 300-301
Ising Corp., C. E 427
Island Equipment Corp 403
Ivers-Lee Company 345

Jelly & Co., Walter H 424

Kelton Cosmetics Co 411
Kessler Chemical Co 390
Kimberly-Clark Corp 341
Kinetic Chemicals Division, E. I. du Pont de Nemours & Co 346-347
Kohnstamm, H., & Co ..... Insert facing 301
Kolmar Laboratories 295
Koster-Keunen Mfg. Co., Inc 360

Lautier Fils 305
Lueders & Co., George 307

Magnus, Mabee & Reynard, Inc 296
Mallinckrodt Chemical Works ... Insert facing 313
Maryland Glass Corp ..... Insert facing 300
Merck & Co., Inc 297
Michel & Company, Inc., M 396

National Aniline Division 290
Neumann, Buslee & Wolfe, Inc 413
New Jersey Machine Co 368
New Jersey Zinc Co 415
New York Quinine & Chemical Works, Inc 303
Norda Essential Oil & Chemical 396, 403, 410, 424

Old Empire Mfg. Chemists, Inc 384
Owens-Illinois Glass Co ..... Insert facing 356

Package Machinery Company 364
Packer Machinery Corp 410
Pantone Press 419
Parsons-Plymouth, Inc., M. W 384
Penick & Co., S. B 378
Pennsylvania Glass Products Co., Inc 352
Pennsylvania Refining Co 372
Perl Machine Mfg. Co 419
Pfaltz & Bauer Co., Inc 427
Pfizer & Co., Inc., Chas ..... Cover 4
Pneumatic Scale Corp., Ltd 366
Popper & Sons, Inc 390
Potdevin Machine Co 376
Progressive Labeling Machine Inc 376

Reheis Co., Inc 417
Reinitz Soap Corp 400
Richford Corporation 342
Roure-Dupont, Inc 300

Santonin Company of America 409
Savoy Drug & Chemical Company 412
Scandia Manufacturing Co 427
Schimmel & Company 288
Sheffield Tube Corp ..... Insert facing 340
Standard Pharmacal Co 414
Sterwin Chemicals, Inc 287
Stokes Machine Co., F. J 362
Stokes & Smith Company 421
Strong Cobb & Co., Inc ..... Insert facing 316
Synfleur Scientific Labs 310

Tablet Coating Book 308
Tamms Industries, Inc 427
Taylor Pharmacal Company 392
Tennessee Eastman Company 404
Thurston & Braidich 390

Ungerer & Co., Inc ..... Cover 3
Union Carbide & Carbon Corp., Carbide & Carbon Chemicals Co 374
U. S. Automatic Box Machinery Co 370
U. S. Bottlers Machinery Co 376

van Ameringen-Haebler, Inc ..... Insert bet. 292-293
Vitamerican Oil Corp 412

Welch, Holme & Clark, Inc 423
Will & Baumer Candle Co 301
Wolf & Co., Jacques 414